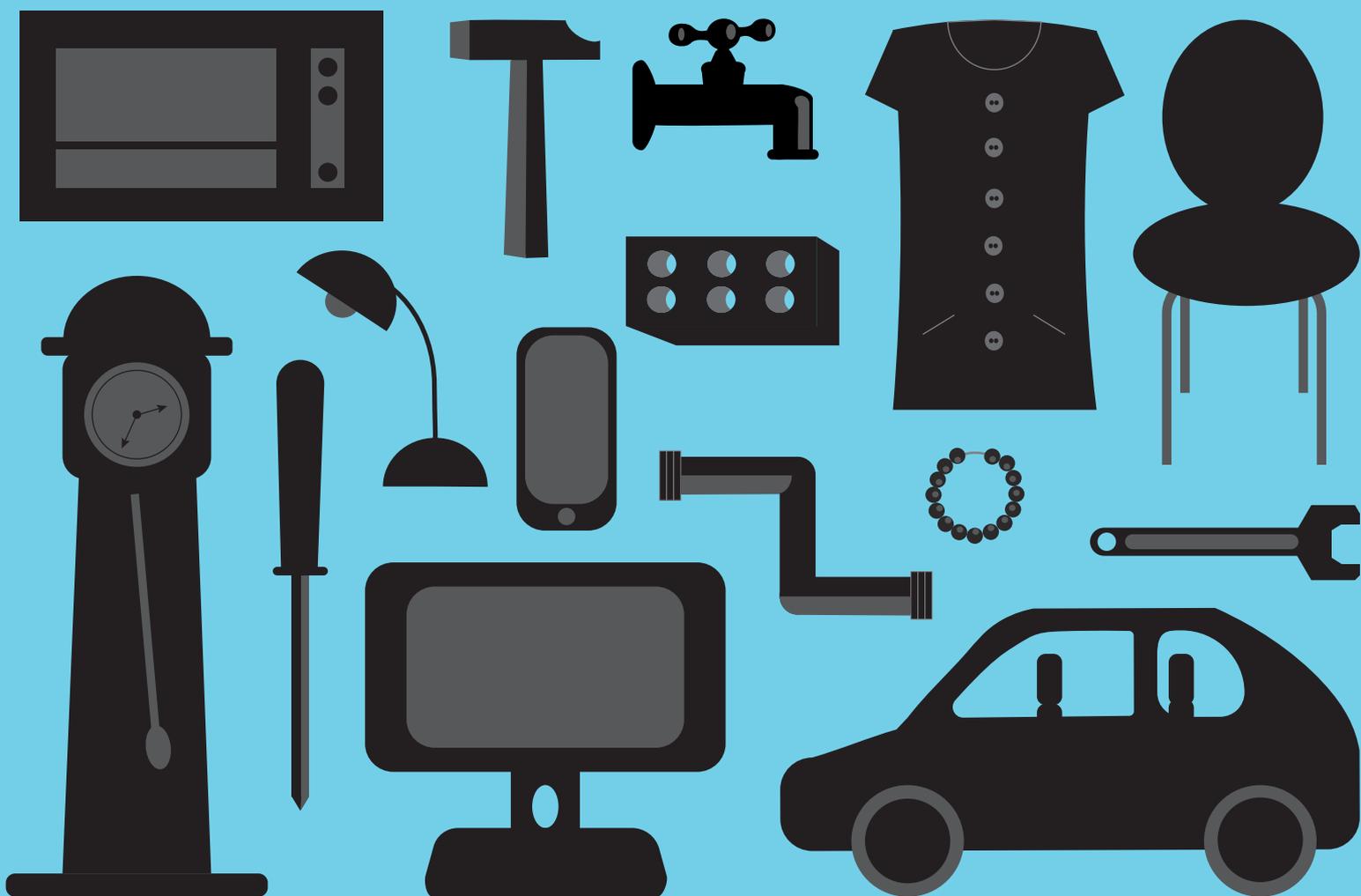


# Waste prevention in Europe — policies, status and trends in reuse in 2017

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# Authors and acknowledgements

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## About this review

This is the fourth EEA report in a series of annual reviews of waste prevention programmes in Europe as stipulated in the European Union (EU) Waste Framework Directive (EU, 2008). This year's review focuses on reuse and covers 33 national and regional waste prevention programmes that had been adopted by the end of 2017.

Article 11 of the Waste Framework Directive states that Member States should take appropriate measures to promote reuse and preparing for reuse such as encouraging the establishment and support of reuse and repair networks. The report describes how reuse is addressed in the waste prevention programmes and provides data on the status of and trends in reuse systems in Europe.

Chapter 1 introduces the concept of waste prevention in a circular economy and describes the policy background. It explains the review's approach and defines key terms used.

Chapter 2 investigates the existing waste prevention programmes, looking at their scope and reuse objectives, measures and indicators, as well as the sectors and stakeholders addressed.

Chapter 3 examines the status of and potential for reuse for key product groups (i.e. textiles, electrical and electronic equipment, furniture, vehicles, and buildings and building components).

Chapter 4 concludes with key findings and prospects for reuse in the context of the circular economy agenda.

# 1 Waste prevention and reuse

This chapter describes the policy background of waste prevention and reuse. It explains how the recent policy focus on the circular economy follows from the waste hierarchy principles as laid down in the Waste Framework Directive, and puts additional emphasis on waste prevention and reuse.

## 1.1 Policy background

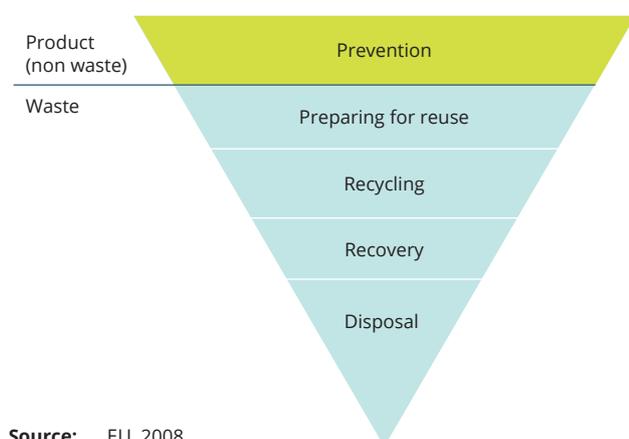
Article 4 of the Waste Framework Directive (WFD; Directive 2008/98/EC on waste and repealing certain Directives) established the waste hierarchy as the overarching principle of waste policies in the EU and EU Member States. According to this, waste prevention has the highest priority, followed by preparing for reuse, recycling and other recovery, and finally disposal as the least desirable option (see Figure 1.1). In line with this, Article 11(1) of the Waste Framework Directive requests that Member States 'take measures, as appropriate, to promote the reuse of products and preparing for re-use activities, notably by encouraging the establishment and support of re-use and repair networks, the use of economic instruments, procurement criteria, quantitative objectives or other measures'.

The WFD Annex lists examples of waste prevention measures and advocates 'the promotion of the reuse and/or repair of appropriate discarded products or of their components, notably through the use of educational, economic, logistic or other measures such as support to or establishment of accredited repair and reuse centres and networks, especially in densely populated regions' (EU, 2008).

The Waste Framework Directive required Member States to establish waste prevention programmes by 12 December 2013. The Directive provides flexibility regarding the nature of the programmes but it does require that objectives and qualitative or quantitative benchmarks are set. Other frameworks related to reuse are the Roadmap to a Resource Efficient Europe (EC, 2011) and the EU's Seventh Environment Action Programme (EU, 2013), which also recognise the need for waste prevention. The Roadmap to a Resource Efficient Europe, for example, states that waste should be 'managed as a resource' by 2020.

A new framework for waste policy and resource efficiency was recently introduced in the Circular Economy Action Plan (EC, 2015). This action plan, which aims to transform Europe into a more competitive, sustainable, resource-efficient economy, addresses a range of economic sectors, including waste. It consists of a concrete programme, 'with measures covering the whole cycle: from production and consumption to waste management and the market for secondary raw materials.' The proposed actions are intended to 'contribute to 'closing the loop' of product lifecycles through greater recycling and re-use, and bring benefits for both the environment and the economy' (EC, 2017a). Within the scope of the Circular Economy Action Plan, the Commission announced that it 'will promote the reparability, upgradability, durability, and recyclability of products by developing product requirements relevant to the circular economy in its future work under the Ecodesign Directive' (EC, 2015, p. 4; see also EEA, 2016b, 2017).

**Figure 1.1** EU waste hierarchy



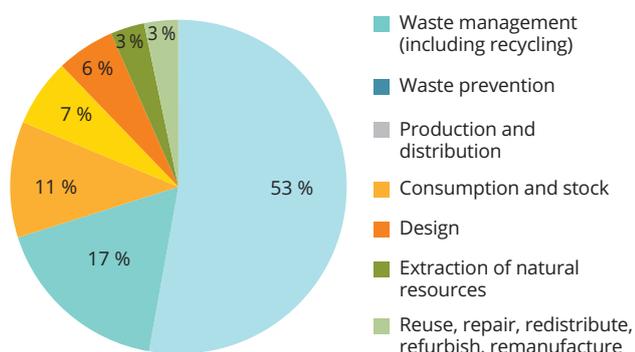
Source: EU, 2008.

The Circular Economy Action Plan also includes various legislative proposals and measures in the areas of production (product design and production processes), consumption and waste management, as well as concrete targets for waste management, including recycling. It has two main elements: (1) communication on how to integrate circular thinking into different stages of the life cycle; and (2) proposed amendments to the regulation of waste treatment <sup>(1)</sup>.

EU legislative proposals for waste, adopted on 22 May 2018, include new rules that 'will help to prevent waste and, where this is not possible, significantly step up recycling of municipal and packaging waste (...) The new legislation also strengthens the "waste hierarchy", i.e. it requires Member States to take specific measures to prioritize prevention, re-use and recycling above landfilling and incineration, thus making the circular economy a reality'.

Implementation of the EU Circular Economy Action Plan has started in the areas of food waste, ecodesign, organic fertilisers, guarantees for consumer goods, and innovation and investments (EC, 2017b). The circular economy approaches in the Member States appear to be predominantly focused on the waste stage, rather than on the early stages of the product life cycle. In a recent EEA survey, only a few countries referred to reuse, repair, redistribution, refurbishment, remanufacturing or design as main instruments for closing material loops (see Figure 1.2; EEA, 2016b).

**Figure 1.2** Reported national policy approaches to closing material loops



Source: EEA 2016b, p. 69.

Recycling and recovery operations have traditionally focused on extracting certain materials (such as aluminium or copper) from waste streams and feeding them back into production systems (UNEP, 2013). Consumer products, however, have become increasingly complex in their functioning and their material composition. This complexity impedes the extraction and recycling of separate and pure materials. Recycling would therefore have to be geared more towards products than materials, with (partial) disassembly and preparation for reuse (UNEP, 2013).

This fits well in a wider strategy on waste prevention addressing the entire life cycle of products (see Box 1.1). Apart from waste legislation, reuse is also subject to product legislation regarding ecodesign and reselling, including warranty aspects and producer liability.

## 1.2 Definitions

Waste prevention encompasses all actions that prevent products, substances or materials from becoming waste. It can be achieved, for instance, by:

- reducing the quantity of materials used in products (e.g. through ecodesign);
- increasing the efficiency with which products are used (e.g. by sharing products instead of purchasing);
- extending the lifespans of products.

The Waste Framework Directive <sup>(2)</sup> gives the following definitions of measures and activities:

**Reuse** means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

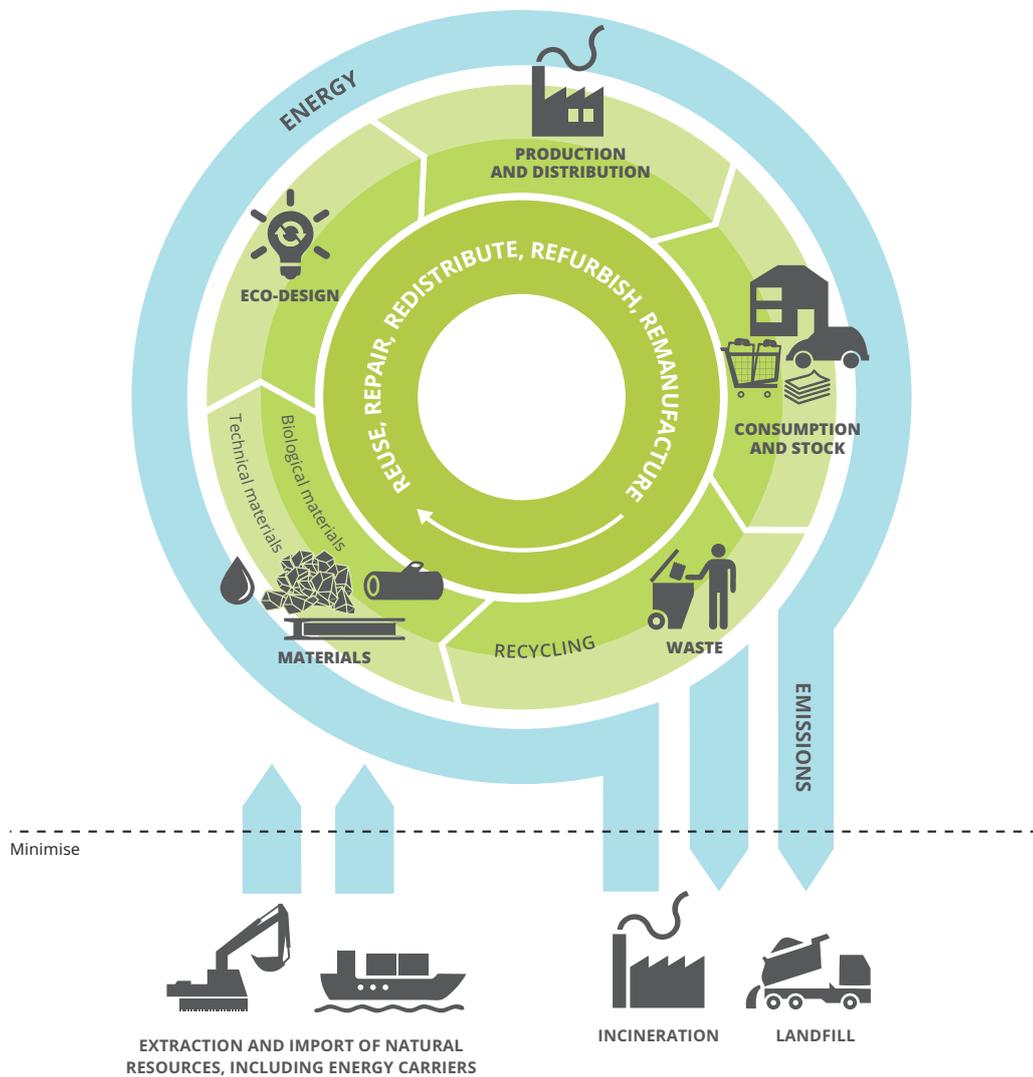
**Preparing for reuse** means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be reused without any other pre-processing.

This distinction is important because preparing for reuse lies mainly in the realm of waste **management** (facilities, infrastructures and collection procedures), whereas reuse as such is part of waste **prevention**.

<sup>(1)</sup> Directives 2008/98/EC on waste, 1999/31/EC on landfill of waste, 94/62/EC on packaging and packaging waste, 2000/53/EC on end-of-life vehicles, 2006/66/EC on batteries and accumulators and waste batteries and accumulators, and 2012/19/EU on waste electrical and electronic equipment.

<sup>(2)</sup> EU, 2008, Art. 3 (13. and 16.).

**Box 1.1 Circular economy concept**



**Note:** Several graphical representations of the circular economy exist. The EEA has proposed this simplified diagram. Waste generation and material inputs are minimised through ecodesign, recycling of waste and reuse of products. Reuse, repair, redistribution, refurbishment and remanufacturing (inner circle) are at the core of this approach. The middle circle represents the material flows in the recycling loop, distinguishing between abiotic technical materials (such as metals and minerals) and biological materials. The outer circle represents the overall energy flows.

**Source:** EEA 2016a.

With regard to reuse, the following terms are also relevant:

**Reconditioning/refurbishment** means a process of returning a product to good working condition by replacing major components that are faulty or close to failure, and making 'cosmetic' changes to update the appearance of a product, such as cleaning, changing fabric, painting or refinishing. Any subsequent warranty is generally less than that issued for a new or a remanufactured product, but the warranty is likely to cover the whole product (unlike repair). Accordingly, the performance of the product may be less than as-new (EMF, 2013).

**Repair** means fixing a fault but with no guarantee on the product as a whole (APSRG, 2014).

**Remanufacturing** means returning a product or component to the performance specification of the original equipment manufacturer.

**Upgrading** refers to a process of disassembly and recovery in which functioning, reusable parts of a used product are taken out and rebuilt into a new one. This process includes quality assurance and potential enhancements or changes to the components.

Reuse can happen via a range of product exchange mechanisms that have different implications for the required infrastructures, collection methods and related governance:

- citizen to citizen (e.g. online marketplaces, flea markets) (C2C);
- citizen to charity organisations, reuse businesses (e.g. with drop-off centres for used goods) or (separate) municipal waste collection (e.g. municipal 'dumps' or kerbside collection of waste electrical and electronic equipment (WEEE)) ('C2B');
- social or other enterprises to people with demand for certain reuse products ('B2C') (e.g. furniture);
- social enterprises or other reuse businesses to enterprises with demand for reuse products ('B2B') (e.g. building components exchange).

Reuse centres, as called for in the Waste Framework Directive Annex, can thus be municipal or privately run businesses as well as charity organisations.

### 1.3 Review methodology

The Waste Framework Directive of 2008 stipulated that EU Member States had to establish a waste prevention programme not later than the end of 2013. This review covers the waste prevention plans available for 36 countries and regions. Belgium has three regional waste prevention programmes and the United Kingdom has four but no central plans. In addition to the 28 EU Member States, the European Free Trade Association (EFTA) countries Iceland, Liechtenstein and Norway (which are also subject to the same obligation under the Water Framework Directive) are also included. Switzerland and Turkey do not have these EU obligations and are therefore not included in this review process; if they develop similar plans, they may be included in the future.

The review is based on the 25 available waste prevention country fact sheets (EEA, 2016c), as well as the original waste prevention programmes of the individual countries (see Annex 1.1 and Table 1.1). In addition, expert and stakeholder interviews were carried out (see acknowledgements). Belgium-Wallonia, Liechtenstein and Romania have not yet adopted waste prevention programmes. The programme of Cyprus was not available for review.

**Table 1.1** Countries and regions included in the 2017 reuse waste prevention review

Austria	Estonia	Liechtenstein <sup>(b)</sup>	Slovenia
Belgium	Finland	Lithuania	Spain
Brussels <sup>(a)</sup>	France	Luxembourg	Sweden
Flanders <sup>(a)</sup>	Germany	Malta	UK
Wallonia <sup>(a)</sup> <sup>(b)</sup>	Greece	Netherlands	England <sup>(a)</sup>
Bulgaria	Hungary	Norway	Northern Ireland <sup>(a)</sup>
Croatia	Iceland	Poland	Scotland <sup>(a)</sup>
Cyprus <sup>(c)</sup>	Ireland	Portugal	Wales <sup>(a)</sup>
Czech Republic	Italy	Romania <sup>(b)</sup>	
Denmark	Latvia	Slovakia	

**Note:** <sup>(a)</sup> Regions; <sup>(b)</sup> no waste prevention plan; <sup>(c)</sup> no assessment possible.

## 2 Reuse activities

This chapter describes how the waste prevention programmes address reuse, particularly with regard to objectives, scope, targets, indicators, and policy instruments and measures. Details are included in Annex 1.

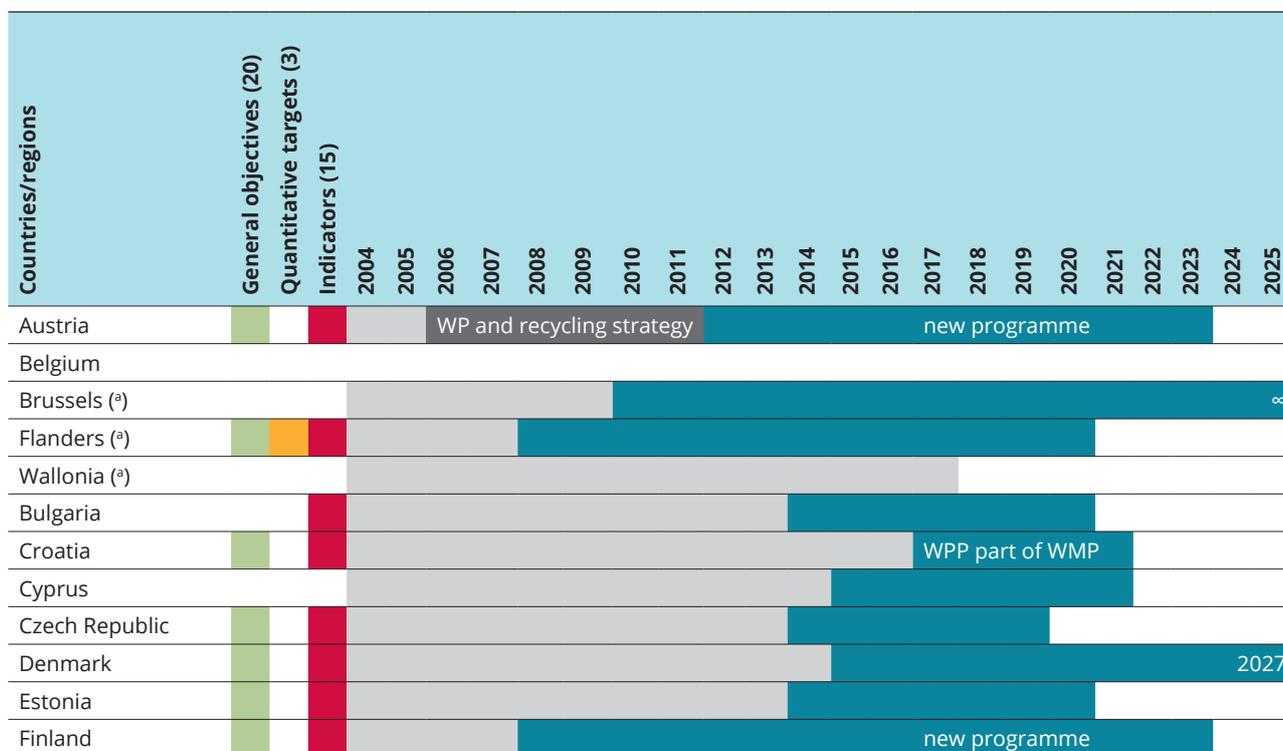
### 2.1 Coverage in waste prevention programmes

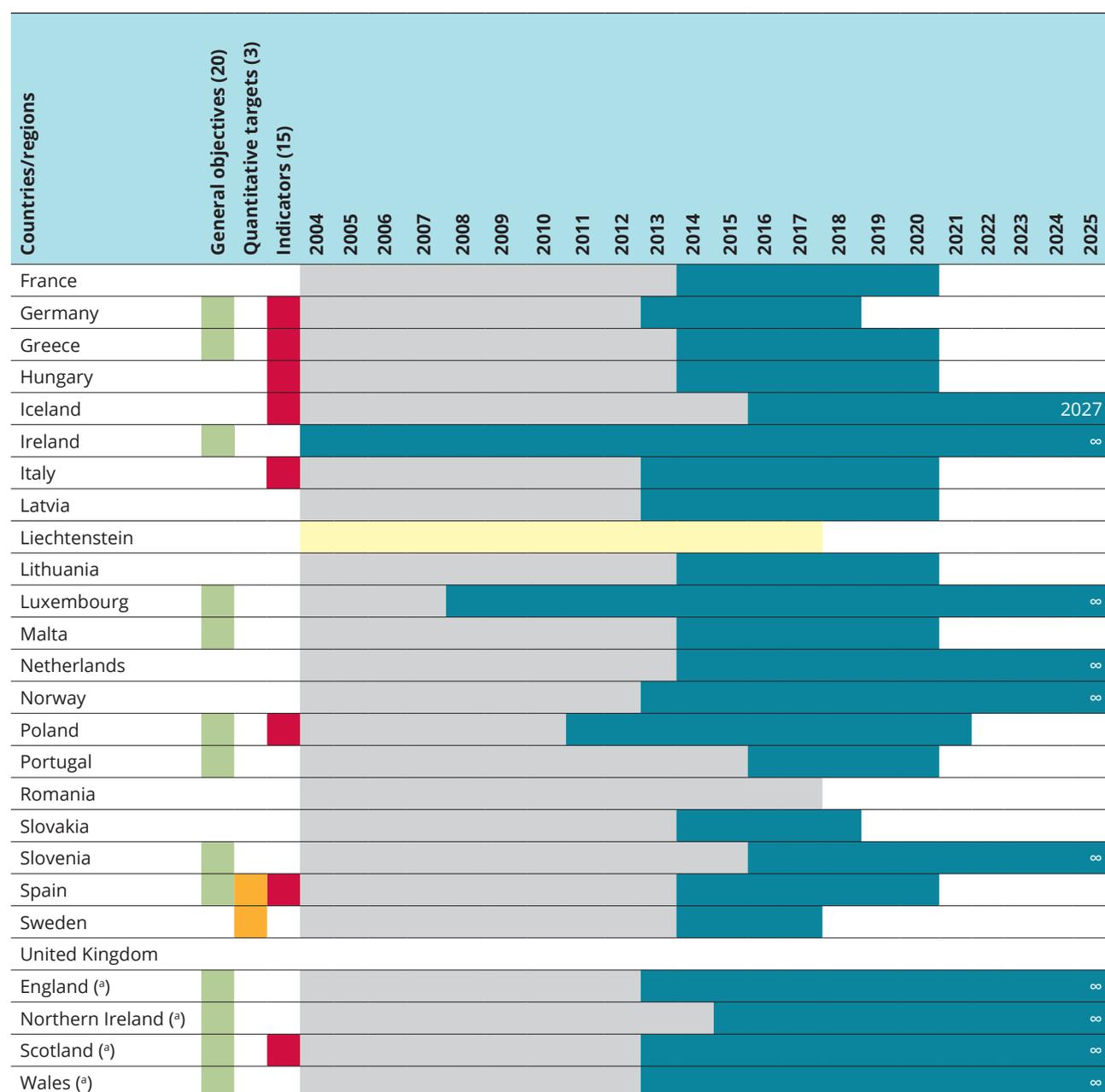
Reuse is specifically addressed in 25 of the 33 adopted programmes. Table 2.1 shows the year of adoption, the duration of the waste prevention programmes and

whether they include general objectives for reuse (20), implement quantitative targets for reuse (3), and/or introduce reuse indicators (15).

A lack of explicit objectives and scope for reuse in programmes does not necessarily mean that the country or region does not engage in reuse, as it may be included in more general recommendations or categories within its waste prevention programmes. Similarly, developing indicators does not necessarily mean that the country has a monitoring mechanism in place yet.

**Table 2.1 Coverage of reuse in the waste prevention programmes adopted in European countries and regions**



**Table 2.1 (cont.) Coverage of reuse in the Waste Prevention Programmes adopted in European countries and regions**


■ Programmes covered by EEA countries/regions

■ No programme

■ No information

■ Duration/coverage of the programme

∞ Virtually indefinite duration

■ General objectives

■ Quantitative targets

■ Indicators

**Note:** <sup>(e)</sup> Regions; WPP, waste prevention plan.

**Source:** EEA, 2014, 2015, 2016c.

### 2.2 Objectives and scope

Objectives linked to reuse are explicitly included in 20 waste prevention programmes (Annex 1.2):

- Austria: further expansion and consolidation of the reuse networks, expansion of the reuse collection of old electrical appliances in communities, expansion of the reuse collection to other usable goods and creation of further markets for reuse products.
- Belgium/Flanders: five objectives for sustainable materials management in the building sector, one of them requiring design to enable the reuse of materials.
- Croatia: establish reuse centres and encourage exchange and reuse of used products, and increase the reuse of demolition material.
- Czech Republic: support reuse and service centres and charitable organisations for the repair and reuse of products and materials.
- Denmark: facilitate the reuse and recycling of electronics and electronic waste to extend product lifespans.
- Estonia: increase customer awareness of the potential contribution they can make to waste prevention.
- Finland: increase reuse through public procurement, town planning, education and advice, promoting the reuse of building supplies and components, researching potential economic policy tools to prolong the lifespan of products, studying the potential for and hindrances to reusing packaging, increasing the reuse of electrical and electronic equipment (EEE) and boosting the supervision of illegal WEEE shipments.
- Germany: support reuse of products.
- Greece: promote reuse of electrical and electronic equipment.
- Ireland: support sustainable growth and employment in the green economy, including reuse enterprises.
- Luxembourg: prevent waste and guide consumers towards products with greater longevity or multiple uses.
- Malta: promote reuse and repair initiatives.
- Poland: increase reuse, for example through networks for the exchange and repair of electrical and electronic equipment and by collecting and preparing WEEE for reuse.
- Portugal: reduce the amount of waste through increased material resource efficiency and reuse.
- Slovenia: promote reuse of items, materials or products.
- Spain: reuse of furniture, clothing and textiles as well as electronic equipment.
- UK-England: encourage better valuing of resources through awareness-raising among businesses and the public regarding waste reduction options, using products for longer, repairing broken items and enabling the reuse of items by others.
- UK-Northern Ireland: increase the supply of and demand for good-quality reusable items by improving collection, promotion and public procurement.
- UK-Scotland: expand the reuse sector: 'We want the sale and use of second hand goods to be seen as an attractive, mainstream, good value option for an increasing range of products. We want reuse businesses and community organisations to thrive, on the back of a growing reputation for quality and value for money.'
- UK-Wales: support for households and businesses to reduce their quantity of waste through reuse.

Most countries define general reuse measures that apply to various products, but a number of countries or regions target specific waste streams for reuse (Table 2.2). The main waste streams covered here are construction and demolition, electrical and electronic equipment, bulky waste, clothing and textiles, packaging, and others such as vehicles and tyres.

## 2.3 Targets and indicators

Setting quantitative targets is hampered by the lack of an established methodology to analyse and measure reuse. Only two countries and one region have set quantitative targets for reuse that shall be achieved by 2020 (Annex 1.3). The Flemish regional target can be

**Table 2.2** Product/waste types addressed by reuse measures, by country

Countries/regions	Construction and demolition	Electrical and electronic equipment	Bulky waste	Clothing and textiles	Packaging	Other <sup>(b)</sup>
Austria						
Belgium/Brussels						
Belgium/Flanders						
Bulgaria						
Croatia						
Czech Republic						
Denmark						
Estonia						
Finland						
France						
Germany						
Greece						
Hungary						
Iceland						
Italy						
Latvia						
Lithuania						
Luxembourg						
Netherlands						
Norway						
Poland						
Portugal						
Slovakia						
Slovenia						
Spain						
Sweden						
United Kingdom/England <sup>(a)</sup>						
United Kingdom/Northern Ireland <sup>(a)</sup>						
United Kingdom/Scotland <sup>(a)</sup>						
United Kingdom/Wales <sup>(a)</sup>						

**Note:** <sup>(a)</sup> Regions; <sup>(b)</sup> other product/waste types include vehicles, tyres, energy infrastructure.

**Source:** EEA, 2016c.

considered comprehensive, while the national Spanish and Swedish targets each refer to specific product groups, respectively EEE and textiles.

- In Flanders, the target was to collect and resell 5 kg of reusable goods per inhabitant per year by 2015. The sector achieved 4.8 kg of reuse per inhabitant. A new target for 2022 is currently being discussed.
- In Sweden, the proportion of total sales of textiles made up of sales of second-hand goods shall increase compared with 2014.
- By Royal Decree 110/2015, Spain introduced a 'preparation for reuse target' for two collection groups, large EEE and small IT and telecommunications equipment, in the national legislation transposing the WEEE Directive (2012/19/EU), namely (1) from 1 January 2017 until 14 August 2018, 2 % of preparation for reuse of category 4 and 3 % of preparation for re-use of category 6; (2) from 15 August 2018, 3 % preparation for re-use of category 4 and 4 % preparation for re-use of category 6.

The fact that quantitative targets for waste prevention through reuse are absent or not referred to in many countries (Table 2.3) is probably linked to the complex classification of waste and the difficult distinction between reuse and preparing for reuse, as mentioned in Section 1.2., as well as the lack of a waste baseline across programmes. Revisions of the waste classification system and attempts to improve waste statistics have also contributed to the problem (see Section 4.1.3).

Indicators and benchmarks are crucial for monitoring progress against objectives and targets. The waste prevention programmes show a wide variety of indicators but there is little clarity on corresponding monitoring mechanisms and follow-up. Many of the reviewed waste prevention programmes do not specifically refer to reuse. Five countries/regions report that they have indicators under development. The Danish waste prevention plan has an indicator but no quantitative targets. Table 2.4 shows specific waste prevention indicators in 15 regional/national programmes. However, as mentioned above, only two countries and one region have set quantitative targets for reuse, namely Spain, Sweden, Flanders.

**Table 2.3** Overview of reuse mentioned in quantitative targets and indicators in waste prevention programmes

Countries/ regions	Quantitative waste prevention targets	Waste prevention indicators
Austria		
Belgium/Brussels ( <sup>a</sup> )		
Belgium/Flanders ( <sup>a</sup> )		
Bulgaria		
Croatia		
Czech Republic		
Denmark		
Estonia		
Finland		
France		
Germany		
Greece		
Hungary		
Iceland		
Ireland		
Italy		
Latvia		
Lithuania		
Luxembourg		
Malta		
Netherlands		
Norway		
Poland		
Portugal		
Slovakia		
Slovenia		
Spain		
Sweden		
United Kingdom/ England ( <sup>a</sup> )		
United Kingdom/ Northern Ireland ( <sup>a</sup> )		
United Kingdom/ Scotland ( <sup>a</sup> )		
United Kingdom/ Wales ( <sup>a</sup> )		

■ Not referring to reuse

■ Referring to reuse

**Note:** (<sup>a</sup>) Regions.

**Source:** EEA, 2016c.

The following indicators specifically address reuse (Annex 1.4):

- Austria: the number and turnover of reuse organisations and the number of second-hand products as targets.
- Belgium/Flanders: indicators referring to quantitative targets about reuse (reused products in kilograms).
- Bulgaria: two indicators refer to reuse. The first concerns the reuse of appliances, reporting the reuse of old equipment in relation to the number of old appliances, the types of appliances and the change from the previous year to the year in question. The second refers to the reuse of packaging and reporting the amount of used packaging in multiple streams when taking into account the total amount of relevant packaging.
- Croatia: the number of newly opened workplaces dealing with waste reuse.
- Denmark: consumption of clothes and textiles, including second-hand clothes
- The Czech Republic: the amount of collected textiles, footwear and selected reusable products in tonnes per year; the number of service centres and reuse networks; the number of products that have gone through service centres and were reused; and the number of non-profit organisations developing activities for the reuse of products and activities related to waste prevention.
- Estonia: the quantity of waste prepared for reuse.
- Finland: EEE reuse volumes (tonnes per year).
- Germany: the share of reused electronic products and the share of reusable packaging.
- Greece: the number of reuse centres and the share of reusable packaging are taken as indicators for reuse.
- Hungary: the reuse rate of materials originating from construction and demolition waste as a percentage; the number of accredited reuse centres; the size of the population served by the reuse centres; the number of second-hand products transferred to accredited reuse centres; marketed second-hand products as a proportion of the number transferred to accredited reuse centres.
- Iceland: reusable packaging as a proportion of the total packaging bearing a recycling deposit.
- Italy: the number of products that enter and leave a reuse centre and the number of visits made to reuse centres are monitored.
- Poland: the percentage of packaging placed on the market that is reusable.
- Spain: the number of reuse centres in operation and number of associated new jobs.

## 2.4 Actors and stakeholders

Table 2.4 lists the actors and stakeholders targeted by reuse measures in the waste prevention programmes (Annex 1.5). Most countries/regions focus exclusively on actors outside the waste management realm, but eight also include waste management businesses. The latter may reflect a need to integrate the waste management aspect into overarching strategies and business models.

## 2.5 Policy instruments and measures

Although only 20 countries/regions contain explicit objectives for reuse, all reviewed waste prevention programmes list measures to promote reuse. Table 2.5 shows some examples, classified according to the relevant product groups.

**Table 2.4** Actors and stakeholders addressed in waste prevention programmes.

Countries/ regions	Business/ SMEs	Industries/ sectors	Regions/ municipalities	Public administrations	Households	Design/ research	Waste management business
Austria							
Belgium/ Brussels (a)							
Belgium/ Flanders (a)							
Bulgaria							
Croatia							
Czech Republic							
Denmark							
Estonia							
Finland							
France							
Germany							
Greece							
Hungary							
Iceland							
Ireland							
Italy							
Latvia							
Lithuania							
Luxembourg							
Malta							
Netherlands							
Norway							
Poland							
Portugal							
Slovakia							
Slovenia							
Spain							
Sweden							
United Kingdom/ England (a)							
United Kingdom/ Northern Ireland (a)							
United Kingdom/ Scotland (a)							
United Kingdom/ Wales (a)							

**Note:** (a) Regions.

**Source:** EEA, 2016c.

**Table 2.5 Selected reuse policy instruments for different product groups, as provided by countries**

Product Group	Examples
<b>Construction and demolition</b>	<p>Promoting of renovation instead of new construction and increasing the lifespan of buildings, e.g. France with specific targets for the number of buildings that should be renovated.</p> <p>Supporting the establishment of reuse centres and markets for used building materials, e.g. the network for the exchange of building components in Germany.</p> <p>The sustainable reuse of greenfield soil in construction and on the reuse of asphalt road planings in Northern Ireland.</p> <p>Transforming the construction materials' classification system (including the permitting of materials intended for reuse), e.g. with case studies within the H2020 project BAMB (= Buildings As Material Banks) that deals with the development of a building pass. The aim of the project is the reduction or elimination of construction and demolition waste. In the process, buildings are regarded as material banks (<a href="http://www.bamb2020.eu">http://www.bamb2020.eu</a>).</p> <p>Preparing guidelines for public procurement on new development, renovations and infrastructure construction that is material efficient and supports the circular economy (Finland).</p> <p>Launching pilot projects for material-efficient practices and ensuring the incorporation of the fundamentals of material efficiency and the circular economy in education and training in the construction sector (Finland).</p> <p>Developing and intensifying the activities of reuse centres for building supplies and components in municipalities (Finland).</p>
<b>Electrical and electronic equipment</b>	<p>Mapping the potential for reuse and repair of electronic waste deposited at recycling facilities through comprehensive research. It includes e.g. the analysis of potentials and barriers in collaboration with relevant stakeholders, a survey of the potentials of the equipment delivered to recycling centres and quantification of environmental benefits.</p> <p>An agreement with a Latvian Electrical Engineering and Electronics Association about running a register of producers of electronic and electrical equipment helps to identify the amount of electrical equipment, which may result in waste.</p> <p>Support the design of electrical and electronic equipment for longer lifespan or better reparability/reusability. United Kingdom, Spain and Finland introduced a law facilitating the dismantling, repair, reuse and recycling of electronic equipment (Ministry of the Environment, 2004). The UK further encourages initiatives and stakeholders. (England<sup>(*)</sup>, Finland, Italy, Spain).</p> <p>Directing research and experimentation funding to prolonging the lifespan of EEE and enabling its reuse (Finland).</p> <p>Studying equipment-sharing potential and the potential for higher utilisation rates (Finland).</p> <p>Strengthening the reuse expertise of actors within the producer responsibility system and increasing the provision of consumer information on EEE lifespans, repair potential and warranty periods (Finland).</p>
<b>Clothing and textiles</b>	<p>Collecting used textiles from households and textile by-products from textile businesses for reuse and recycling (Estonia, Latvia, Netherlands).</p> <p>Support of the manufacturing, developing, purchasing and selling of textiles designed for long life, or do not contain hazardous substances and/or can be reused and recycled, e.g. the Sustainable Clothing Action Plan in England.</p>

**Table 2.5 (cont.) Selected reuse policy instruments for different product groups, as provided by countries**

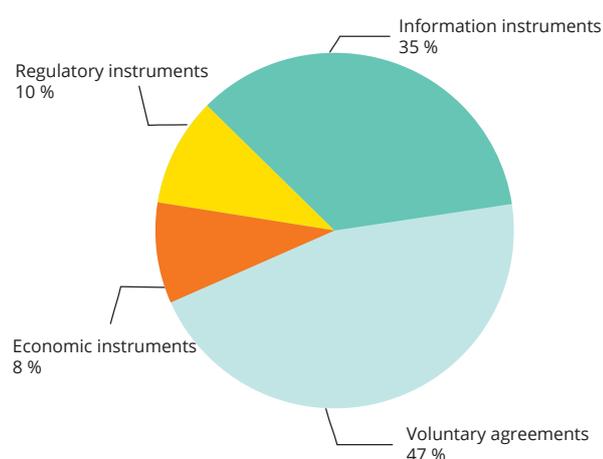
Product Group	Examples
<b>Packaging</b>	<p>Reducing the use of single use plastic bags. England introduced a law in 2015 that retailers must charge for plastic bags. The government also provides comprehensive information on how to implement the directive as a retailer and consumer.</p> <p>Scotland has a single use carrier bag charge.</p> <p>France, Ireland, and Northern Ireland for example, introduced a tax on plastic bags and promote the usage of reusable bags, whereas some other countries fully ban plastic bags.</p> <p>Promoting the increase of the categories of (beverage) containers that carry a refundable deposit. The deposit system in Iceland once comprised refillable and non-refillable aluminium, steel, plastic and glass packaging. Since 2008, non-refillable packaging is not part of the system. Instead, a tax must be paid. The return rate is high and so is the reuse.</p> <p>Promoting minimalist design in packaging and reusable/biodegradable packaging, e.g. in Portugal.</p> <p>Preparing a report on the barriers to, and potential for, packaging reuse and a proposal for measures to boost reuse among key packaging categories (Finland).</p>
<b>Other</b>	<p>Promoting the reuse of books in the primary, secondary and tertiary education sectors, e.g. in Greece.</p> <p>Promoting ecodesign for vehicles, to facilitate dismantling and recycling at the end-of-life stage, e.g. in Spain.</p> <p>Introducing collaborative approaches to reuse in relation to energy infrastructure by identifying priority components for reuse in the oil and gas industry; addressing opportunities for reusing onshore wind turbines and bases for example in Scotland*.</p> <p>Support and encourage the establishment and continuation of re-use and repair networks throughout Northern Ireland.</p> <p>Introducing economic instruments to increase product lifespans (Finland).</p> <p>Studying the potential for advancing the sharing economy and removing its barriers, and supporting sharing economy experiments (Finland).</p>
<b>General</b>	<p>Developing networking platforms for product reuse; inter alia in Austria, Bulgaria, Czech Republic, England<sup>(*)</sup>, Estonia, Flanders<sup>(*)</sup>, France, Hungary, Italy, Luxembourg, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Wales<sup>(*)</sup>.</p> <p>Developing insurance packages for reuse organisations, e.g. in Austria.</p> <p>Creating new business models for sharing, hiring, and leasing, e.g. in Denmark and the Netherlands.</p> <p>Reducing taxes for enterprises whose activities lead to the reuse of a product in Bulgaria.</p> <p>Preparing national positions on promoting recyclability, reparability and resource efficiency in the EU's legislative and enforcement activities (Finland).</p> <p>Conducting experiments in the development of new services to promote reuse and recycling (Finland).</p> <p>National quality standard for reuse organisations (Scotland: Revolve).</p>

**Note:** <sup>(\*)</sup> Regions.

**Source:** EEA, 2016c.

The reported reuse measures can also be classified according to policy instruments (Figure 2.1). Voluntary agreements are mentioned most frequently (47 %), followed by informational instruments (35 %). Only 10 % of the programmes implement or aim to implement regulatory instruments and only 8 % economic instruments. Further information is provided in Annex 1.6.

**Figure 2.1** Distribution of policy Instruments for 186 reuse measures



**Source:** Author's own compilation based on EEA (2016c) and waste prevention programmes of EEA member countries (see Annex 1.6).

## 2.6 Common approaches

Waste prevention programmes in many countries (Austria, Bulgaria, Belgium-Flanders, Denmark, Greece, Norway, Poland, Sweden, United Kingdom — England and Wales) address logistical and/or organisational issues, including sales and deliveries to repair centres. Determining or implementing a licence tax for those enterprises whose activity directly leads to the reuse of some products (e.g. shoe repair, furniture, clothes, household appliances) is also mentioned by Austria and Bulgaria. Creating and maintaining a national website, incorporating regional information on the location and availability of second-hand construction materials, is emphasised by Austria, Bulgaria and Greece.

The development of rules for projects focusing on acquiring or improving skills to repair and maintain products is stressed, as is the subsequent implementation of related projects (Austria, Bulgaria). Further measures include the development of insurance packages for reuse organisations (Austria) and the publication of guides to sharing mechanisms (Denmark, Malta). France, Italy and Portugal advocate better product design, aiming to extend product lifetimes, reducing resource intensity or increasing reuse (diverting waste). The benefits of guaranteeing and increasing the lifespan of products are emphasised by countries such as France, Hungary and the United Kingdom (England), while Greece's Ministry of Education advocates reusing books in the primary, secondary and tertiary education sectors. Iceland and Luxembourg call for reducing the use of single use packaging, while England mentions that the definition of waste applied to reuse and repair activities has to be clarified.

Reuse systems have developed rapidly in some EU Member States for specific product groups. Three successful government-supported network initiatives — De Kringwinkel in Belgium-Flanders, Revital in Austria, and the repair cafés in Germany and the Netherlands — indicate that repair and reuse is feasible for many products already on the market, often without any improvements in terms of their design for repair.

Based on expert and stakeholder interviews (KIC Raw Materials, 2017) and literature research, four core strategies have been identified that contribute to the increased success of reuse activities.

- support cooperation along the value chain (especially among retailers, welfare organisations, waste management actors and environment agencies);
- strengthen networks for municipal reuse activities and develop communication tools;
- define binding quality standards from recording to guarantee;
- create a 'level playing field' between reuse and waste management activities by modifying legal framework conditions, e.g. co-financing of reuse covered by service charges.

The Belgian approach is particularly integrated, with instruments such as reduced tax on repair (also applied elsewhere, see Box 2.1), a regulation stating that products for reuse are not defined as 'waste' (which could, for example, be essential for transport and transboundary movements), and governmental financial support for reuse centres based on the regional reuse rate.

The examples show that reuse is increasingly recognised as a waste prevention measure but that national approaches to encourage reuse are, so far, predominantly implemented as single measures. An overall approach to effectively integrating reuse, in the same manner as recycling is integrated into the waste management system, does not exist. Legislation is lagging behind in this respect. The EU Packaging Directive (94/62/EC) contains requirements for reuse, implemented in a harmonised standard <sup>(?)</sup>, but, compared with other recovery or disposal options, there are no concrete standards for reuse.

### Box 2.1 Reduced VAT on repair

The Swedish government has introduced tax breaks on repairs for different products, such as bicycles or washing machines, to encourage reuse and extension of the useful lifespan of products.

In 2017, Sweden's Minister of Financial Markets and Consumer Affairs announced new tax breaks to change consumers' mindsets on repair and reuse. In Sweden, VAT is 25 % but after 1 January 2017 the tax on labour and materials for repairs was halved.

Other countries applying a reduced VAT rate (at different rates) for small repair services are Belgium (specifically for social enterprises), Ireland, Luxembourg, Malta, the Netherlands, Poland and Slovenia.

**Sources:** EC, 2017c; RREUSE, 2017.

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<sup>(?)</sup> EN 13429:2004 Packaging — Reuse.

## 3 Status and potential of reuse for key product groups

This chapter analyses reuse for selected product groups (textiles, electric and electronic equipment, furniture, buildings and building components, and vehicles). Other product groups that have obvious reuse potential, such as toys, bicycles and sports equipment, packaging, aircraft, or medical equipment are not considered in view of data and space limitations. The information presented in this chapter draws on interviews with experts in the Member States and on a literature review of good practices for reuse and remanufacturing <sup>(4)</sup>.

### 3.1 Textiles

Although, for most products, European statistics do not differentiate between new and used products (Sander and Schilling, 2010), imports and exports of used textiles are documented in Eurostat's international trade reporting. For SITC (Standard International Trade Classification) product code 26901 — worn clothing and other worn textile articles traded in bulk or in bales, sacks or similar bulk packaging — the value (in euros) and weight of imports and exports between individual countries have been recorded since 1988. Therefore, the available datasets make it possible to show developments in transboundary movements of reused textiles over time as evidence of the trends in textile reuse.

Table 3.1 gives an overview of the trade between Member States (intra) and Member States' trade out of the EU (extra) for the period 2010 to 2013 in millions

of tonnes. It shows that exports of used clothes from the EU seem to be particularly relevant and increasing. However, the trend in trade data does not give any indication of the development of national reuse trends, and intra-EU trade also includes exporting mixed textiles for sorting and re-exporting.

**Table 3.1 Worn clothing textile trade.**

Year	EU 28 Extra (million tonnes)		EU 28 Intra (million tonnes)	
	Import	Export	Import	Export
2010	0.07	1.03	0.61	0.59
2011	0.08	1.08	0.57	0.66
2012	0.09	1.15	0.61	0.65
2013	0.10	1.18	0.59	0.64

**Source:** UN Comtrade and UN Service Trade, 2013.

Recently, shopping in charity or second-hand shops has become more socially acceptable and even fashionable, 'in particular in some affluent areas where clothing donated is from luxury or high fashion brands' (WRAP, 2016, p. 13). Results from the recent European Clothing Action Plan (ECAP) study (EC, 2017a) point to Denmark as a country where buying second-hand clothing is relatively popular, but even there it does not exceed 9 % of total purchasing decisions. In other countries, this share is typically below 5 %.

<sup>(4)</sup> For example, 70 good practice examples have been collected in the context of reuse and remanufacturing, inter alia, in the following areas: ICT and electronic products, machinery and equipment, buildings and building parts, and reuse in social enterprises (KIC Raw Materials, 2017).

### Box 3.1 De Kringwinkel – Reuse centres, Belgium (a)

Reuse centres have been appearing in Flanders since the early 1990s and have mostly pursued the social objectives of job creation for low-skilled and long-term unemployed people, and of making a variety of goods accessible for low-income and vulnerable target groups. As the sector rapidly expanded, environmental aspects gained more importance, including the overall goal of reducing waste by recovering reusable and recyclable products and making them available for the broad population of the region. As the reuse centres were already incorporated within the Flemish waste management policy they were able to securely embed themselves into local structures and communities.

The established reuse centres can adopt three different types of collection: (1) systematic collection, sorting and sale of goods according to a pre-selection with a view to their possible reuse; (2) overall collection, including door-to-door collection and container collection, without visual pre-selection; (3) additional services such as repair or sorting centres. All collection methods need to be free of charge.

The reuse shops do not directly have profit making as a goal, but they still depend on having a healthy financial situation. The shops' total turnover is generated from their sales and subsidies. Around 39 % is generated by the sale of reusable goods. 14 % comes from selling materials to the recycling sector and tonnage fees for collection. The greatest share (46 %) is generated by subsidies they receive for providing employment.

In 2015, there were 125 shops employing around 5 000 people.

**Note:** (a) There are similar business models in other countries, e.g. the Netherlands, Spain, the United Kingdom.

**Source:** De Kringwinkel, 2017.

## 3.2 Electrical and electronic equipment

The WEEE Directive (2002/96/EC and 2012/19/EU) requires all EU Member States to collect and report data on the amounts of electrical and electronic products put on the market and the WEEE collected, recycled and recovered. Because of the complexity and heterogeneous material composition of WEEE — including hazardous substances — different targets apply for preparing for reuse and recycling and for recovery for different categories of WEEE under the WEEE Directive. EU Member States are also called upon to report on the reuse of whole appliances but only on a voluntary basis. This explains why waste management data for this waste stream are more detailed than those for other streams such as textiles.

Table 3.2 shows that some Member States do not document the amounts reused separately. It is assumed that these amounts are covered in the recycling data. Eighteen countries currently report on the reuse of appliances while other countries report on reuse and recycling only in an aggregated category. Overall, the amounts reported as reused are very small compared with the amounts recycled in all countries. It has to be noted that the statistics cover the reuse of devices that were previously disposed of as waste. It does not include reuse of appliances via second-hand internet trade as citizen to citizen (C2C) operations, etc. In addition, these data are only for the EU Member States, Norway, Iceland and Liechtenstein, not for the remaining EEA member countries.

**Table 3.2 Reuse of EEE and treatment of WEEE (according to the WEEE Directives 2002/96/EC and 2012/19/EU), 2015**

Country/year	EEE POM (tonnes)	Total WEEE recycling and reuse (tonnes)	EEE reuse (tonnes)	Share of reuse in POM (%)	Share of reuse in recycling (%)	Share of recycling in POM (%)
United Kingdom	1 769 164	536 580	20 046	1.1	3.7	30.3
Germany <sup>(b)</sup>	1 713 902	608 587	15 552	0.9	2.6	35.5
France	1 676 384	505 466	8 905	0.5	1.8	30.2
Italy <sup>(b)</sup>	883 883	258 679	n/a	n/a	n/a	29.3
Spain <sup>(b)</sup>	557 481	142 165	1 385	0.2	1.0	25.5
Poland	526 914	138 914	652	0.1	0.5	26.4
Netherlands <sup>(a)</sup>	306 011	97 669	963	0.3	1.0	31.9
Belgium	289 273	91 739	3 548	1.2	3.9	31.7
Sweden	256 890	120 387	306	0.1	0.3	46.9
Austria	186 644	65 090	1 770	0.9	2.7	34.9
Czech Republic <sup>(b)</sup>	182 025	61 313	0			33.7
Norway	177 512	86 991	2 253	1.3	2.6	49.0
Denmark	154 842	61 010	177	0.1	0.3	39.4
Romania <sup>(b)</sup>	139 587	28 064	n/a	n/a	n/a	20.1
Portugal	130 404	50 284	13	0.0		38.6
Greece	125 136	43 888	0			35.1
Finland	118 011	57 858	895	0.8	1.5	49.0
Ireland	104 897	40 458	636	0.6	1.6	38.6
Hungary	103 993	43 415	0			41.7
Bulgaria <sup>(a)</sup>	56 700	29 353	141	0.2	0.5	51.8
Slovakia	52 701	20 258	0			38.4
Croatia	44 702	21 987	0			49.2
Slovenia	31 414	9 074	4	0.0		28.9
Lithuania	31 067	13 120	0			42.2
Latvia <sup>(b)</sup>	18 352	4 443	69	0.4	1.6	24.2
Malta <sup>(b)</sup>	17 138	1 791	n/a	n/a	n/a	10.5
Estonia	15 449	4 382	0			28.4
Luxembourg	11 769	5 127	0			43.6
Iceland <sup>(b)</sup>	9 250	2 532	n/a	n/a	n/a	27.4
Cyprus	8 771	2 049	98	1.1	4.8	23.4
Liechtenstein	428	313	0			73.1

**Note:** POM = Products put on the market; <sup>(a)</sup> 2013; <sup>(b)</sup> 2014; n/a, not available.

**Source:** Eurostat, 2017.

Results of an ongoing research project initiated by the German Environment Protection Agency show the relevance of other reuse channels not recorded in the waste statistics. Table 3.3 shows reuse amounts obtained for eBay (the largest internet trade portal for used goods in Germany) and estimates for socio-economic reuse initiatives (partly cooperating with municipalities/waste management) in Germany.

**Table 3.3 Reuse volumes in Germany (tonnes per year)**

	eBay	Reuse initiatives
EEE	119 616	7 082-17 917
Clothing and home textiles	15 253	27 815
Furniture	17 917	98 683

**Source:** UBA (2017).

The ratios of reused volumes handled by eBay and reuse initiatives are very different for the product groups considered. For used EEE, eBay is obviously the most relevant reuse pathway. For textiles, and in particular for furniture, other reuse initiatives appear more dominant.

Apart from these statistics on reuse volumes, there is good information on national initiatives regarding WEEE compliance. Identified good practices for the category 'WEEE prevention, preparation for reuse' are summarised in Box 3.2.

### Box 3.2 Good practices in WEEE compliance

- A new website, WasteServ, launched in **Malta** in 2012 offers members of the public the opportunity to give away any unwanted items, such as electronic goods, to extend the life of these items before they become waste.
- In the **Czech Republic**, some producer responsibility organisations (PROs) organise individual activities related to reuse. For instance, there are projects in which PROs encourage consumers to donate a used mobile phone, computer or home appliance. The PRO would then arrange the repair of the EEE (to ensure that it is ready to use and safe) and send it on to the partner charity.
- **England** (United Kingdom) supports reuse by working with local authority collection facilities to encourage them and show them different ways to improve the reusability of EEE. In addition, England offers workshops for the industry to develop strategies on how to implement individual producer responsibilities.
- In **Flanders** (Belgium) at the primary and secondary collection points, WEEE is separated into reusable and non-reusable categories. A visual selection is first made to identify equipment, which then goes to reuse centres where it is either repaired or sold directly. The criteria for reusability have been determined by the PRO [Recupel](#) and the reuse sector in a common agreement. In addition, the PRO and its entities must give access to reuse players on the basis of specific agreements it concludes with the latter. Municipalities must conclude an agreement with a reuse structure agreed by the Public Waste Agency of Flanders (OVAM).
- In its [Municipal Sectoral Plan](#), **Wales** (United Kingdom) plans to invest in setting up an accredited reuse and repair network, which should explore the practicalities and desirability of this infrastructure. A preparation for reuse steering group should therefore provide support.
- **Austria** introduced a set of measures regarding preparation for reuse, such as:
  1. developing a [guideline](#) for the reuse of WEEE in Austria;
  2. establishing a reuse and service centre — [R.U.S.Z.](#) — that provides an inexpensive service to repair electrical appliances, improve energy efficiency, prepare items for reuse and distribute them to socially vulnerable people;
  3. setting up repair networks (e.g. [Repanet](#));
  4. developing a sustainable seal for long-life electrical and electronic equipment that is easy to repair.
- **Sweden** proposed a monetary incentive with the aim of promoting the repair of (W)EEE. The idea is to implement a law that allows Swedes to claim back from their income tax up to half of the labour costs of repairing home appliances (e.g. washing machines, fridges).
- In the Hamon Law on Consumption, 2014, **France** defined the obligation for PROs to contract with social solidarity actors and allow them access to collection centres (the obligation is set out in PRO 2014 specifications).
- The **Romanian** non-governmental organisation (NGO) Ateliere Fara Frontiere provides work for formerly unemployable people that includes preparing WEEE for reuse. Cooperation with PROs that give access to NGOs to collected WEEE exists. The refurbished appliances are then donated to schools, kindergartens and other indigent institutions.

**Source:** Information provided by the European Commission, 26 February 2018.

### 3.3 Furniture

Furniture is collected as bulky waste from households and from commercial sources such as offices, public institutions, industry and the service sector. In European waste statistics, separate data on furniture does not exist. Furniture from households is included in reports on municipal waste, while furniture from other sources might be included in data categories such as wood, metals or mixed waste.

Bulky waste in the United Kingdom (including bulky items from both kerbside collection and household waste recycling centres) mainly consists of furniture (42 %), textiles (19 %) and WEEE (19 %). From a total of 1 590 000 tonnes (2010-2011), this results in about 670 000 tonnes of discarded furniture, or 10.6 kg per capita. Nearly half the weight of furniture was estimated to be reusable in its current condition or after a minor repair. In Flanders, 27.19 kg of bulky waste is generated per capita per year. Since this amount does not include WEEE or other separately collected wastes, it can be assumed that the Flemish bulky waste fraction consists mainly of furniture and mattresses. In France, it is estimated that 1.3 million tonnes of used furniture are discarded each year, or approximately 19.7 kg per capita per year. France has the only national furniture extended producer responsibility schemes of their kind in the world, known as *Éco-mobilier* (domestic furniture) and *Valdelia* (professional furniture).

Furniture waste streams — and the related potential for waste prevention through reuse — are considerable. With an EU-28 population of 508 million people and an average amount of discarded furniture of 15 kg per capita, 7.62 million tonnes of furniture are estimated to be generated in Europe each year.

### 3.4 Vehicles

Every year, end-of-life vehicles (ELV) generate between 7 and 8 million tonnes of waste in the European Union (EC, 2016a). An ELV is any type of motor vehicle that is classed as waste. ELVs can be prevented by increasing the number of kilometres travelled per vehicle and by decreasing both the number of vehicles per capita and the weight per vehicle.

The ELV Directives (Directive 2000/53/EC and Directive 2005/64/EC) feature reuse targets, although these are combined with either recycling or recovery targets. Since 2007, new car volumes in Europe have fallen steeply, reaching a near 20-year low of 12.3 million in 2013 (BCA, 2015). Sales of second-hand cars outstrip new car sales in all countries. 'According to a 2012 CarFax report, there are more than 40 million registration transfers of cars in Europe per annum, showing the huge value of the second-hand car market in the EU. Approximately 66 % of European second-hand car purchases are carried out through

#### Box 3.3 Furniture Re-use Network (FRN), United Kingdom <sup>(\*)</sup>

For more than 20 years, the Furniture Re-use Network has been supporting, assisting and developing charitable reuse organisations across the United Kingdom by helping households in need access furniture, white goods and other household items at affordable prices. In addition, they support reuse charities in providing training and work placement opportunities for people who are socially excluded from education, training and employment. FRN's objectives comprise: (1) to promote the reuse, recycling and refurbishment of used furniture and household appliances by furniture recycling charities; (2) to alleviate the need, hardship and distress of those people who need help in this area; (3) to provide an information service, training and development support to furniture recycling charities; and (4) to bring members together for the purposes of mutual support.

The network employs 4 700 people and 48 800 volunteers are involved. To date, 3.4 million items of furniture and EEE have been channelled to reuse.

**Note:** <sup>(\*)</sup> There are similar business models in other countries, e.g. Germany.

**Source:** FRN, 2017.

dealerships (authorised and independent), while 34 % are acquired from private individuals' (EC, 2014a).

The average second-hand car price from a consumer survey was EUR 9 358, resulting in a total value transfer of more than EUR 374 billion. The average second-hand car age was 6.2 years and it had been driven 87 000 km previously. In the United Kingdom, from 2006 to 2013, the average age of car retirement increased by almost 7 % for petrol cars and by almost 12 % for diesel cars. Over the same period, a year-on-year increase in lifetime mileage was observed for passenger cars. This increase equates to a 33 % rise in lifetime mileage between 2006 and 2013 (over 50 000 km) (Ricardo-AEA, 2015). According to Febelauto, the average car age in Belgium increased from 12.9 years in 2001 to 15.1 years in 2014 (Febelauto, 2017).

Figure 3.1 illustrates the significant market share for reused vehicles. In all EU Member States more second-hand cars are bought than new cars; Denmark has the highest average used-new ratio of 3.6 but there are indications of ratios as much as 8:1 in some eastern

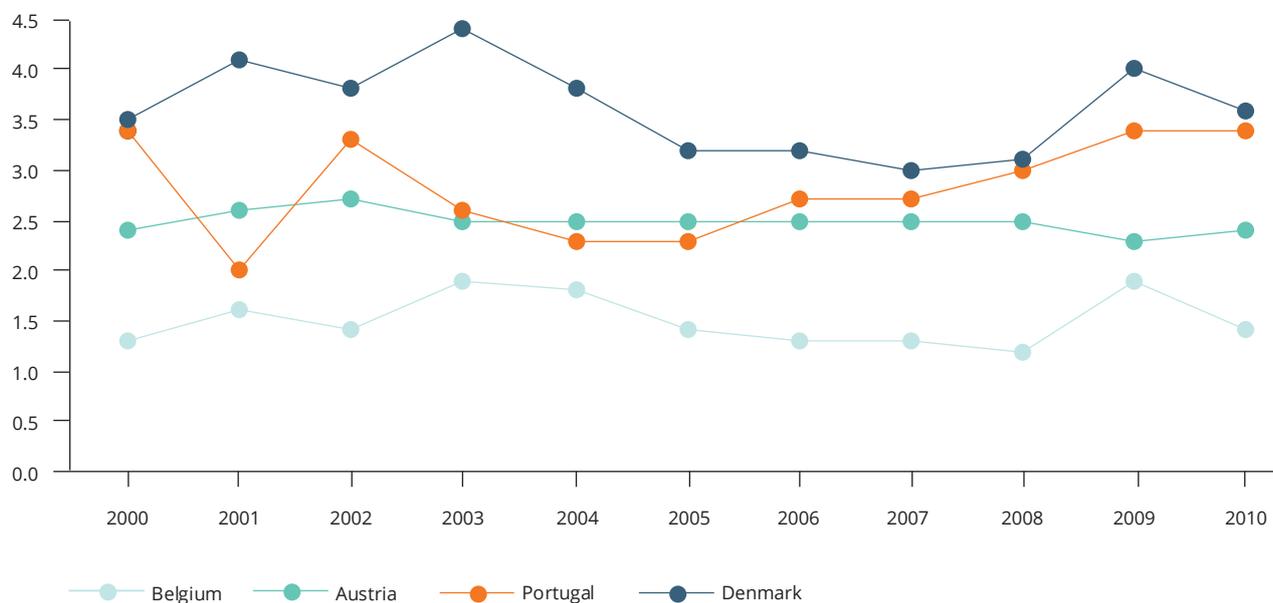
European countries, where consumers have lower incomes (EC, 2014b).

From a life-cycle perspective, a shifting of the burden from the 'use' phase to the 'production' phase of cars can be observed. Cars have become heavier and use more complex polymers, and critical and non-ferrous metals (EC, 2007; Zorpas et al., 2012). At the same time, fuel efficiency and end-of-life treatment performance are slightly improving. Therefore, trade-offs, for example with air pollution and fuel efficiency standards, have to be considered when promoting vehicle lifetime extension.

### 3.5 Buildings and building components

Construction and demolition waste (CDW) is estimated to account for roughly one quarter of all waste generated in the EU (EC, 2016b). CDW can be prevented by intensifying the use of buildings, extending their lifetimes (e.g. Fuertes, 2015), reducing the living space per capita of new dwellings, and directly reusing

**Figure 3.1 Used-new car ratios for selected EU Member States, 2000-2010**



Source: EC, 2014a.

building components for the same purpose for which they were conceived.

The reuse of building and construction materials that have not become waste, and are used again for the same purpose for which they were conceived, is more difficult to grasp (e.g. see Charytonowicz and Skowroński, 2015, for a case study for Poland). Good examples are modular and multifunctional buildings that can be easily adapted to provide functionalities that change over time. However, such applications are not yet very significant and are currently subject to intensive research and development <sup>(5)</sup>. The research project BAMB (Buildings as Material Banks) with 15 European partners in particular aims to implement innovative pilot studies that overcome the current challenges for the reuse of building materials:

There are a number of challenges affecting reuse. Depending on national and local circumstances, these can include:

- Mismatch of supply and demand in terms of both quantity and quality — if heavy materials need to be moved over long distances to reach their markets, this can significantly increase both costs and environmental impacts.
- Time lags due to deconstruction — the length of time needed to deconstruct can be unappealing where extra costs are incurred (e.g. through having to pay local property taxes). Expiry of planning permissions can also impose time constraints.
- Lack of facilities — space is limited and expensive in highly built-up areas. This can put pressure on the market for reclaimed items.
- Reluctance to use products without certification of tested performance — this is one of the biggest barriers to reuse. Often there is very little information about the origin of the product and its length of use in a particular application <sup>(6)</sup>. This

means that the 'worst case scenario' is normally applied to the potential reuse applications. Testing of performance can be expensive and require destruction of samples to mitigate possible risks of further use. These costs will be added to the cost of the product/material and may override savings from reuse.

- Health and safety risks of manual deconstruction — these risks form a key reason to opt for mechanical demolition techniques rather than manual ones. While these risks can be mitigated through improved data on the building design and composition, such information is often not available.
- Mixed materials — construction techniques change quickly and increasingly mix traditional and novel building materials. This hampers deconstruction and reuse.
- Value of products and materials — this can be both an opportunity and a barrier. In the case of low-value/cheap products and materials, the incentive to reuse versus the cost of careful removal can be low or negative (Hobbs and Adams, 2017).
- Because of a lack of economic incentives, mechanical demolition happens more often than selective deconstruction.

Surveys of reclamation levels in the United Kingdom over a 15-year period have shown a significant decline (Hobbs and Adams, 2017). Reuse of building components from demolition waste, house furnishings and equipment (e.g. windows and doors, and building technologies such as heating systems, hot water tanks) requires selective demolition and involves pre-processing operations such as sorting, cleaning and repairing. Such activities, materials and products could benefit from online marketplaces that may expand their role as trading channels in future (see Box 3.4) but there are no figures concerning their magnitude available yet.

<sup>(5)</sup> An example is the project 'Development and advanced prefabrication of innovative, multifunctional building envelope elements for MODular REtrofitting and CONNEctions'. Project reference: 633477, funded under H2020-EU.3.3.1.

<sup>(6)</sup> In January 2018 the Danish enterprise *Gamle mursten* (Old Bricks) announced that their reused bricks had obtained CE marking. This is the first reused product in the building sector to have obtained the certification for CE marking. See: <http://en.gamlemursten.dk/about-gamle-mursten> and <http://gamlemursten.dk/nyheder/2018/nu-kan-gamle-mursten-ce-maerkes>

### Box 3.4 Bauteilbörsen — Building components exchange, Switzerland/Germany

Established in 1995, Bauteilbörsen, a Swiss business to business (B2B) non-profit company offers a wide range of second-hand building components in good condition, including parquet flooring, natural stone, partitions, bricks, doors, windows, glass, stairs, bath tubs, basins, fittings, washing machines, water heaters, mirrors, tiled stoves, fitted kitchens, ovens, wash basins and fridges. The company provides dismantling and demolition services, the sale of used elements, the registration in a country-wide online database, and consultancy on the components' reuse according to the needs and wishes of the customers. The basic idea is the operation of a 'virtual warehouse' where all available items will be registered. Around 35 people are employed in various positions, ranging from administration and sales to work in the repair shop.

In Germany, Bauteilbörse Bremen has the goal of collecting used building components and structural elements during demolition or reconstruction processes to provide them for reuse. Common components and elements comprise floors, doors, windows, stairs, kitchens, etc. Bauteilbörse Bremen mainly represents the communication portal and organisation tool between those who own and those who are in need of building components and elements. In the best case, the exchange between both parties is realised on-site. However, Bauteilbörse Bremen also has a warehouse.

**Source:** Bauteilbörse Basel, 2018; Bauteilbörse Bremen, 2018.

### 3.6 Economic significance and trends

Charitable enterprises gather statistical data to promote their reuse activities, but relatively little data on the extent of reuse is available for the commercial second-hand sector (Harris, 2012). A study reviewing the second-hand sector in Europe concludes: 'The results of the surveys conducted in the different countries participating in the project show that there is hardly any official definition of the sector in the individual national economies — the same is true on European level. Therefore the sector is not clearly represented in the official statistics. [...] it has to be stressed that there are no statistical data available on European level on the number or turnover figures in terms of the trade with used goods. This kind of trade is still assigned to the retail trade and is not considered a separate branch' (Arold and Koring, 2008).

In 2009, the EU-27 sector for second-hand goods retailing in stores across all product groups realised a turnover of EUR 8.1 billion, from which EUR 2.0 billion added value was generated, the smallest level of output among the retail trade and repair sub-sectors. Across the 65 700 enterprises that sold second-hand goods as their main activity, there were 120 400 people employed in the EU-27, equating to 0.7 % of the retail trade and repair workforce. The United Kingdom alone accounted for 32.0 % of the EU-27 turnover and 36.1 % of value added in second-hand goods retailing in stores (Eurostat, 2011). The United Kingdom has a special status with regard to the importance, number and organisation of the non-profit second-hand enterprises in the sector. As a charity organisation, Oxfam is one of biggest second-hand retailers in the United Kingdom. In 2011 it had 750 shops across the United Kingdom,

with around 20 000 volunteers (Arold and Koring, 2008). In Flanders, about 19 000 tonnes of second-hand furniture is offered in 127 'Kringwinkel' thrift shops, accounting for 22 % of the sales. Total annual sales are about EUR 40 million (De Kringwinkel, 2017).

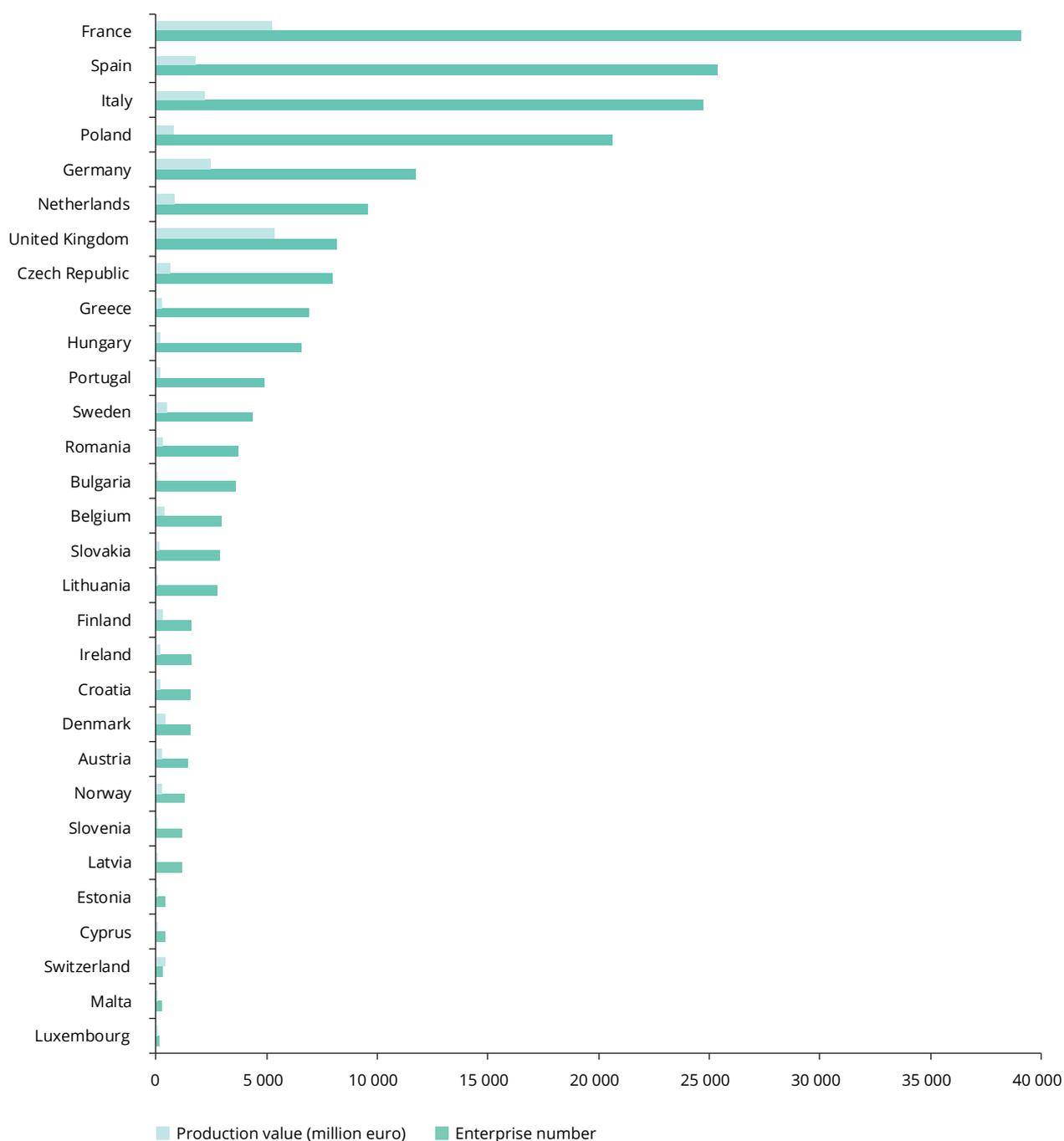
Second-hand furniture is increasingly traded on online consumer-to-consumer (C2C) platforms (Emarketer, 2016). For example, the Dutch website marktplaats.nl (eBay group) recently celebrated its billionth ad and currently welcomes 7.3 million visitors per month; on average, four ads are placed every second. The average Dutch person places seven classified ads on Marktplaats every year. The site reported that the value of traded goods amounted to EUR 10 billion per year. In addition, Eurostat statistics provide some data on the size of repair sectors by nation; therefore some data for a part of the reuse sector (in this case for lifetime extension) are available (Poppe, 2014). Data are available for a range of sub-sectors and for different product categories (partly intersecting), for example repair of computers and personal and household goods, repair of communication equipment, repair of household appliances and home and garden equipment, or repair of watches, clocks and jewellery.

The size of the repair sector — particularly of computer and personal and household goods — differs markedly from country to country, with diverging trends. Recent Eurostat data show that, even in countries with a comparably large number of enterprises operating in the repair of computers and personal and household goods sector, the value added remains rather low (see Figure 3.2).

In contrast, the rise of so-called 'repair cafés' all over Europe indicates the growing popularity of reuse. The initiative started in the Netherlands in 2009, bringing interested consumers and people with repair skills together. The organisation and implementation is based on volunteers; everybody can organise a repair café and get support from the Stichting Repair Café organisation. This approach not only fosters reuse in the practical sense (more than 70 % of the products

brought to the repair cafés can actually be used again) but also promotes sustainable lifestyles and consumption patterns (Wilts and von Gries, 2013). In the Netherlands and Belgium, and recently also in Germany, more than 200 repair cafés have opened in recent years (Wilts and von Gries, 2013). A similar trend is seen in Denmark, where repair cafés are popping up in large cities. Repair of products may be further encouraged by tax incentives.

**Figure 3.2** Enterprises repairing computers and personal and household goods in 2015



Source: Eurostat, 2017.

While purchase and use of second-hand cars is a long and well established market segment for vehicles (not least because cars belong to a high-price market segment), the share of reused electronic products in particular plays a minor role with regard to the overall market size. A key difference here is obviously the pace of technological development. As a result of rapid innovation, electronic equipment and its components become obsolete over short periods of time (Moore, 1965). The reuse rate for building parts is limited at present because of technical difficulties in disassembly, lack of standardisation of components and unfavourable cost-price ratios

between construction and deconstruction (Hobbs and Adams, 2017).

Trends are also diverging across product groups. The second-hand market for vehicles seems rather saturated and market shares remain stable. Reuse of textiles, buildings and building components appears to have risen slightly. Reuse of EEE shows a mixed picture: on the one hand, a variety of initiatives such as the repair cafés, and particularly eBay, has supported the reuse of second-hand products. On the other hand, the increasing complexity of products has led to consumers focusing much more strongly on primary products.

## 4 Conclusions

### 4.1 Key findings

#### *Reuse bridges waste prevention and the circular economy*

The analysis of reuse systems and related waste prevention activities in the EEA member countries points to potential environmental and socio-economic benefits. Reusing products and components at the end of their use phase can reduce waste generation and potentially save natural resources by extending the use phase of products at the same time. Reuse, as well as preparation for reuse, can thus provide a link between the waste hierarchy of the Waste Framework Directive, on the one hand, and the European Commission's Circular Economy Action Plan, on the other.

Understanding reuse in different sectors requires insight into technical aspects (e.g. with regard to 'design for repair'), economic incentives (with labour costs as a key factor) and especially consumption patterns. The limited available data on reuse activities point to considerable variation between the EEA countries and also between the policy approaches chosen that aim to support reuse systems.

#### *National approaches are very diverse and rely mostly on voluntary arrangements*

All 33 waste prevention programmes analysed for this report include specific waste prevention measures related to support for reuse systems (see Annex 1.6). The measures indicated address a broad range of products as well as stakeholders. Many countries have initiated reuse networks that offer high-quality second-hand products to consumers, with Flanders and Austria as front-runners.

Voluntary agreements are most frequently mentioned as specific policy measures (47 %), followed by informational instruments (35 %). Only 10 % of the programmes implement or aim to implement

regulatory measures and only 8 % use or plan to use economic instruments.

Looking at the additional case studies analysed for this report, many reuse activities are often at least partly financed by programmes that aim to reintegrate long-term unemployed people or people with disabilities into the labour market. These co-benefits of waste prevention and employment potential are a key characteristic of reuse systems as part of waste prevention efforts and in many cases act as a key driver for public activities. At the same time only a few waste prevention measures indicated in the waste prevention programmes are dedicated to supporting market-driven reuse activities such as refurbishment or remanufacturing.

Thirteen regional/country programmes include waste prevention indicators related to reuse systems. However, only two regions/countries have implemented a quantitative target for reuse, namely Flanders and Sweden. This low number also highlights the challenges of monitoring reuse activities for most product groups.

#### *Reuse is still largely a niche activity*

Although reuse and preparation for reuse are high on the political agenda, the concepts remain rather vague. They include very different activities, such as individual sales at flea markets and organised waste management, as well as third sector activities. Because of a lack of consensus on a conceptual framework, it is difficult to describe the actual relevance of reuse and preparation for reuse in specific waste regimes so far, or to assess progress in moving up the waste hierarchy from disposal and recycling to reuse or prevention (DEFRA, 2012).

All 33 waste prevention programmes analysed for this report include waste prevention measures such as voluntary agreements and regulatory, economic or informational instruments specifically

related to the support of reuse and reuse systems. The measures indicated address a broad range of products as well as stakeholders. Several countries initiated reuse networks that offer high-quality second-hand products to consumers. Flanders and Austria have been front-runners in this field, but many other countries have started to build upon their experiences.

The analysis of five different product groups has highlighted diverging framework conditions, economic incentives and market shares of reuse systems: while reuse is an established market model for cars, it is still in its infancy for many other product groups.

### 4.2 Prospects

The overall market share of second-hand products in the EEA member countries is difficult to assess but is obviously clearly below its technical, economic and social potentials. According to various experts, the repair and reuse of products has even decreased in recent decades (Poppe, 2014). The reason for this can be found in the increasing complexity of products in conjunction with shorter innovation cycles, both of which have led to a rapid loss of product values, which boosts the purchase of new products.

In addition, the reuse of products is hampered by an often conscious degradation of product qualities. The limited evidence available suggests that the effective lifetime of a range of consumer products is decreasing, despite improved technical capacities for recycling (EEA, 2017). 'Planned obsolescence' is acknowledged as a priority area for action in the Circular Economy Action Plan, the results of a recent European Parliament study (European Parliament, 2016) and many waste prevention strategies.

Although 'designing products in a smarter way, extending their useful lives and changing the role of such products within the system will be crucial to the achievement of a circular economy' (EEA, 2017, p. 6), reuse, repair, redistribution, remanufacture and refurbishment have been receiving much less attention than other waste-related issues. There is, however, a need for new measures to strengthen reuse and extend the lifespans of products.

Reuse businesses and C2C online market trading of suitable products, such as clothing, children's toys and furniture, are increasing due to improved marketing channels (e.g. internet sales and citizen groups organised on social media). Currently, most reuse measures in the Member States' waste prevention programmes focus on specific niche markets, frequently operated by social enterprises. In other market segments economic incentives could be strengthened through market-based instruments, innovation support and 'green procurement'. Upscaling would also benefit from regulatory measures related to product qualities, liabilities and especially reuse-friendly design requirements for products. However, many of these enabling mechanisms are beyond the remit of waste authorities and would have to be tackled in a wider (circular economy) context.

### 4.3 Final remarks

Reviews of waste prevention trends and policies aim to contribute to the ongoing European and national policy processes. The review process is hampered by a lack of common waste prevention targets and indicators, data quality issues and time lags between the adoption and implementation of waste prevention programmes. Analyses beyond waste prevention — for example of circular economy and resource efficiency aspects — is required to understand waste generation trends and drivers, and link them to overall waste prevention efforts.

With regard to the analysis of reuse systems in the EEA member countries, an improved monitoring approach would be an important step forward to focus waste prevention policies on the most effective and efficient measures. Such a monitoring system should ideally include preparation for reuse as well as reuse, integrate the different reuse channels and allow these data to be linked to economic figures on the market shares of second-hand products in different sectors.

The newly adopted EU waste legislation (of 22 May 2018) stipulates the monitoring of waste prevention measures in the EU Member States and establishes new reporting obligations on reuse and food waste, which will be instrumental in achieving harmonised data collection and reporting mechanisms.

# Abbreviations and acronyms

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B2B	Business to business
B2C	Business to citizen
C2B	Citizen to business
C2C	Citizen to citizen
CDW	Construction and demolition waste
EC	European Commission
ECAP	European Clothing Action Plan
EEA	European Environment Agency
EEE	Electrical and electronic equipment
EFTA	European Free Trade Association
Eionet	European Environment Information and Observation Network
ELV	End-of-life vehicles
EPA	Environmental Protection Agency, Ireland
ETC	European Topic Centre
EU	European Union
MSW	Municipal solid waste
NGO	Non-governmental organisation
NWPP	National waste prevention programme
OVAM	Public Waste Agency of Flanders
PRO	Producer responsibility organisation
SMEs	Small and medium-sized enterprises
UBA	Umweltbundesamt (German Federal Environment Agency)
VAT	Value added tax
WFD	Waste Framework Directive
WPP	Waste prevention programme
WEEE	Waste Electrical and Electronic Equipment

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# Annex 1

## A1.1 Status of the waste prevention programmes in Europe as of 1 December 2017

Country/region	Programme adopted by 30 Nov 2017	Title and link to the programme If programme is not ready, status of the programme
Austria	Yes	Abfallvermeidungsprogramm  ( <a href="http://www.bundesabfallwirtschaftsplan.at/vermeidungsprogramm.html">http://www.bundesabfallwirtschaftsplan.at/vermeidungsprogramm.html</a> ) Waste prevention programme (Chapter 5 of the Federal Waste Management Plan 2017) ( <a href="http://www.bundesabfallwirtschaftsplan.at/dms/bawp/BAWP_Band_1_EN.pdf">http://www.bundesabfallwirtschaftsplan.at/dms/bawp/BAWP_Band_1_EN.pdf</a> ) Waste prevention programme 2017 ( <a href="https://www.bmnt.gv.at/umwelt/abfall-ressourcen/abfallvermeidung/Abfallvermeidungsprogramm-2017.html">https://www.bmnt.gv.at/umwelt/abfall-ressourcen/abfallvermeidung/Abfallvermeidungsprogramm-2017.html</a> )
Belgium		
Brussels (e)	Yes	Plan de prévention et de gestion des déchets ( <a href="http://document.environnement.brussels/opac_css/elecfile/Plandechets_2010_FR">http://document.environnement.brussels/opac_css/elecfile/Plandechets_2010_FR</a> ) Plan voor de preventie en het beheer van afvalstoffen ( <a href="http://document.leefmilieu.brussels/opac_css/elecfile/AfvalPlan_2010_NL.PDF?langtype=2067">http://document.leefmilieu.brussels/opac_css/elecfile/AfvalPlan_2010_NL.PDF?langtype=2067</a> )
Flanders (e)	Yes	Uitvoeringsplan milieuverantwoord beheer van huishoudelijke afvalstoffen (UMBHA) ( <a href="http://www.ovam.be/sites/default/files/2014_UMBHA-geconsolideerd-DEF.pdf">http://www.ovam.be/sites/default/files/2014_UMBHA-geconsolideerd-DEF.pdf</a> ) Materiaalbewust bouwen in kringlopen — Preventieprogramma duurzaam materialenbeheer in de bouwsector 2014-2020 ( <a href="http://www.ovam.be/sites/default/files/2014-DEF-Milieuverantwoord-milieugebruik-bouw-3luik-LR.pdf">http://www.ovam.be/sites/default/files/2014-DEF-Milieuverantwoord-milieugebruik-bouw-3luik-LR.pdf</a> )
Wallonia (e)	No	Walloon Waste-Resources Plan — Draft plan ( <a href="http://environnement.wallonie.be/enquete-dechetsressources/docs/WWRP-NTS-EN.pdf">http://environnement.wallonie.be/enquete-dechetsressources/docs/WWRP-NTS-EN.pdf</a> ) (Public enquiry in 2017)
Bulgaria	Yes	НАЦИОНАЛЕН ПЛАН ЗА УПРАВЛЕНИЕ НА ОТПАДЪЦИТЕ 2014-2020 Г. ( <a href="http://www.moew.government.bg/static/media/ups/tiny/file/Waste/NACIONALEN_PLAN/_NPUO_2014-2020.pdf">http://www.moew.government.bg/static/media/ups/tiny/file/Waste/NACIONALEN_PLAN/_NPUO_2014-2020.pdf</a> ) National Waste Management Plan 2014-2020 ( <a href="http://www.pwm-ee.eu/sites/default/files/NPUO_ENG_22_10_2014_06_01_2015%20-%20BG_0.pdf">http://www.pwm-ee.eu/sites/default/files/NPUO_ENG_22_10_2014_06_01_2015%20-%20BG_0.pdf</a> )

### A1.1 (cont.) Status of the waste prevention programmes in Europe as of 1 December 2017

Country/region	Programme adopted by 30 Nov 2017	Title and link to the programme If programme is not ready, status of the programme
Croatia	Yes	<p>PLAN GOSPODARENJA OTPADOM REPUBLIKE HRVATSKE ZA RAZDOBLJE 2017.-2022. GODINE</p> <p>(<a href="http://www.mzoip.hr/doc/plan_gospodarenja_otpadom_republike_hrvatske_za_razdoblje_2017-2022_godine.pdf">http://www.mzoip.hr/doc/plan_gospodarenja_otpadom_republike_hrvatske_za_razdoblje_2017-2022_godine.pdf</a>)</p> <p>Waste Management Plan 2017-2022; An integral part of the Plan is the Waste Prevention Plan</p> <p>(<a href="http://www.mzoip.hr/doc/management_plan_of_the_republic_of_croatia_for_the_period_2017-2022.pdf">http://www.mzoip.hr/doc/management_plan_of_the_republic_of_croatia_for_the_period_2017-2022.pdf</a>)</p>
Cyprus	Yes	National Waste Prevention Programme 2015-2021 <sup>(b)</sup>
Czech Republic	Yes	<p>PROGRAM PŘEDCHÁZENÍ VZNIKU ODPADŮ ČR</p> <p>(<a href="http://www.mzp.cz/c1257458002f0dc7/cz/predchazeni_vzniku_odpadu_navrh/\$file/oodp-ppvo-2014_10_27.pdf">http://www.mzp.cz/c1257458002f0dc7/cz/predchazeni_vzniku_odpadu_navrh/\$file/oodp-ppvo-2014_10_27.pdf</a>)</p> <p>Czech Republic's Waste Prevention Programme</p> <p>(<a href="https://www.mzp.cz/C1257458002F0DC7/cz/predchazeni_vzniku_odpadu_navrh/\$FILE/OO-EN_WPP_Czech-20150407.pdf">https://www.mzp.cz/C1257458002F0DC7/cz/predchazeni_vzniku_odpadu_navrh/\$FILE/OO-EN_WPP_Czech-20150407.pdf</a>)</p>
Denmark	Yes	<p>Danmark uden affald II — Strategi for affaldsforebyggelse</p> <p>(<a href="http://mst.dk/media/91797/mst_pixi_web_30-11-2015_-2.pdf">http://mst.dk/media/91797/mst_pixi_web_30-11-2015_-2.pdf</a>)</p> <p>Denmark without Waste II - A Waste Prevention Strategy</p> <p>(<a href="http://eng.mst.dk/media/164923/denmark-without-waste-ii_wasteprevention.pdf">http://eng.mst.dk/media/164923/denmark-without-waste-ii_wasteprevention.pdf</a>)</p>
Estonia	Yes	<p>RIIGI JÄÄTMEKAVA 2014-2020</p> <p>(<a href="http://www.envir.ee/sites/default/files/riigi_jaatmekava_2014-2020.pdf">http://www.envir.ee/sites/default/files/riigi_jaatmekava_2014-2020.pdf</a>)</p>
Finland	Yes	<p>Valtakunnallinen jätesuunnitelma</p> <p>(<a href="http://www.ym.fi/fi-FI/Ymparisto/Jatteet/Valtakunnallinen_jatesuunnitelma">http://www.ym.fi/fi-FI/Ymparisto/Jatteet/Valtakunnallinen_jatesuunnitelma</a>)</p> <p>National Waste Plan — Towards a recycling society</p> <p>(<a href="http://www.ym.fi/en-US/The_environment/Waste/The_National_Waste_Plan">http://www.ym.fi/en-US/The_environment/Waste/The_National_Waste_Plan</a>)</p>
France	Yes	<p>Programme national de prevention des déchets 2014-2020</p> <p>(<a href="https://www.ecologique-solidaire.gouv.fr/sites/default/files/Programme_national_prevention_dechets_2014-2020.pdf">https://www.ecologique-solidaire.gouv.fr/sites/default/files/Programme_national_prevention_dechets_2014-2020.pdf</a>)</p>
Germany	Yes	<p>Abfallvermeidungsprogramm des Bundes unter Beteiligung der Länder</p> <p>(<a href="https://www.bmub.bund.de/fileadmin/Daten_BMU/Pool/Broschueren/abfallvermeidungsprogramm_bf.pdf">https://www.bmub.bund.de/fileadmin/Daten_BMU/Pool/Broschueren/abfallvermeidungsprogramm_bf.pdf</a>)</p>
Greece	Yes	<p>ΕΘΝΙΚΟ ΣΡΑΣΗΓΙΚΟ ΣΧΕΔΙΟ ΠΡΟΛΗΨΗΣ ΔΗΜΙΟΤΡΓΙΑΣ ΑΠΟΒΛΗΣΩΝ</p> <p>(<a href="http://www.ypeka.gr/LinkClick.aspx?fileticket=2Y2%2B%2BPSM4P0%3D&amp;tabid=238&amp;language=el-GR">http://www.ypeka.gr/LinkClick.aspx?fileticket=2Y2%2B%2BPSM4P0%3D&amp;tabid=238&amp;language=el-GR</a>)</p>
Hungary	Yes	<p>Országos Megelőzési Program (Országos Hulladékgyűjtési Terv 2014-2020)</p> <p>(<a href="http://www.szelektivinfo.hu/iparfejlesztés/uj-uton-a-hazai-hulladekgazdalkodás/az-országos-hulladekgazdalkodási-terv-es-az-országos-megelőzési-program">http://www.szelektivinfo.hu/iparfejlesztés/uj-uton-a-hazai-hulladekgazdalkodás/az-országos-hulladekgazdalkodási-terv-es-az-országos-megelőzési-program</a>)</p> <p>(<a href="http://videkstrategia.kormany.hu/download/c/96/90000/Orszagos%20Hulladekgazdalkodasi%20Terv%202014-2020.pdf">http://videkstrategia.kormany.hu/download/c/96/90000/Orszagos%20Hulladekgazdalkodasi%20Terv%202014-2020.pdf</a>)</p>
Iceland	Yes	<p>Saman gegn soun — Almenn stefna um úrgangsförvarnir 2016-2027 (Together against waste — Public policy on waste prevention 2016-2027)</p> <p>(<a href="https://www.stjornarradid.is/media/umhverfisraduneyti-media/media/PDF_skrar/Saman-gegn-soun-2016_2027.pdf">https://www.stjornarradid.is/media/umhverfisraduneyti-media/media/PDF_skrar/Saman-gegn-soun-2016_2027.pdf</a>)</p>

## A1.1 (cont.) Status of the waste prevention programmes in Europe as of 1 December 2017

Country/region	Programme adopted by 30 Nov 2017	Title and link to the programme If programme is not ready, status of the programme
Ireland	Yes	Towards a Resource Efficient Ireland — National Waste Prevention Programme, 2014-2020 ( <a href="http://www.epa.ie/pubs/reports/waste/prevention/TowardsAResourceEfficientIreland.pdf">http://www.epa.ie/pubs/reports/waste/prevention/TowardsAResourceEfficientIreland.pdf</a> )
Italy	Yes	Programma Nazionale di Prevenzione dei Rifiuti ( <a href="http://www.minambiente.it/sites/default/files/archivio/normativa/dm_07_10_2013_programma.pdf">http://www.minambiente.it/sites/default/files/archivio/normativa/dm_07_10_2013_programma.pdf</a> ) ( <a href="http://www.minambiente.it/sites/default/files/archivio/comunicati/Programma%20nazionale%20prevenzione%20rifiuti.pdf">http://www.minambiente.it/sites/default/files/archivio/comunicati/Programma%20nazionale%20prevenzione%20rifiuti.pdf</a> )
Latvia	Yes	Atkritumu apsaimniekošanas valsts planu 2013.–2020.gadam ( <a href="https://likumi.lv/doc.php?id=255629">https://likumi.lv/doc.php?id=255629</a> )
Liechtenstein	No	No information
Lithuania	Yes	Dėl Valstybinės Atliekų Prevencijos programos Patvirtinimo ( <a href="https://www.e-tar.lt/portal/lt/legalAct/TAR.09C26B84F785">https://www.e-tar.lt/portal/lt/legalAct/TAR.09C26B84F785</a> )
Luxembourg	Yes	Plan général de gestion des déchets ( <a href="http://environnement.public.lu/fr/publications/dechets/plan_general_gd.html">http://environnement.public.lu/fr/publications/dechets/plan_general_gd.html</a> )
Malta	Yes	Waste Management Plan for the Maltese Islands — A Resource Management Approach, 2014-2020 ( <a href="https://environment.gov.mt/en/document%20repository/waste%20management%20plan%202014%20-%202020%20-%20final%20document.pdf">https://environment.gov.mt/en/document%20repository/waste%20management%20plan%202014%20-%202020%20-%20final%20document.pdf</a> )
Netherlands	Yes	Afvalpreventieprogramma ( <a href="http://www.vang-hha.nl/@148486/nederland-2013">http://www.vang-hha.nl/@148486/nederland-2013</a> )
Norway	Yes	Forebygging av avfall (Chapter 4 in the waste management plan Fra avfall til ressurs) ( <a href="https://www.regjeringen.no/contentassets/27128ced39e74b0ba1213a09522de084/t-1531_web.pdf">https://www.regjeringen.no/contentassets/27128ced39e74b0ba1213a09522de084/t-1531_web.pdf</a> )
Poland	Yes	National Waste Prevention Programme ( <a href="http://www.mos.gov.pl/g2/big/2014_10/a400f6bb998e8fbc1bc8451fe5c41b11.pdf">http://www.mos.gov.pl/g2/big/2014_10/a400f6bb998e8fbc1bc8451fe5c41b11.pdf</a> )
Portugal	Yes	Urban Waste Prevention Program — Programa de Prevenção de Resíduos Urbanos ( <a href="http://www.apambiente.pt/index.php?ref=16&amp;subref=84&amp;sub2ref=106&amp;sub3ref=268">http://www.apambiente.pt/index.php?ref=16&amp;subref=84&amp;sub2ref=106&amp;sub3ref=268</a> )
Romania	No	Romania started a project to develop a waste prevention programme in 2014. The project is not concluded.
Slovakia	Yes	Program predchádzania vzniku odpadu SR na roky 2014–2018 ( <a href="http://www.minzp.sk/files/sekcia-enviroentalneho-hodnotenia-riadenia/odpady-a-obaly/registre-a-zoznamy/ppvo-vlastnymaterial.pdf">http://www.minzp.sk/files/sekcia-enviroentalneho-hodnotenia-riadenia/odpady-a-obaly/registre-a-zoznamy/ppvo-vlastnymaterial.pdf</a> )
Slovenia	Yes	PROGRAM RAVNANJA Z ODPADKI in PROGRAM PREPREČEVANJA ODPADKOV REPUBLIKE SLOVENIJE ( <a href="http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/zakonodaja/varstvo_okolja/operativni_programi/op_odpadki.pdf">http://www.mop.gov.si/fileadmin/mop.gov.si/pageuploads/zakonodaja/varstvo_okolja/operativni_programi/op_odpadki.pdf</a> )

### A1.1 (cont.) Status of the waste prevention programmes in Europe as of 1 December 2017

Country/region	Programme adopted by 30 Nov 2017	Title and link to the programme If programme is not ready, status of the programme
Spain	Yes	<p>Programa estatal de prevención de residuos 2014-2020</p> <p>(<a href="http://www.mapama.gob.es/es/calidad-y-evaluacion-ambiental/planes-y-estrategias/Programa%20de%20prevencion%20aprobado%20actualizado%20ANFABRA%2011%2002%202014_tcm30-192127.pdf">http://www.mapama.gob.es/es/calidad-y-evaluacion-ambiental/planes-y-estrategias/Programa%20de%20prevencion%20aprobado%20actualizado%20ANFABRA%2011%2002%202014_tcm30-192127.pdf</a>)</p> <p>MEMORIA DE ACTIVIDADES AERESS 2016</p> <p>(<a href="http://www.aeress.org/content/download/6522/50074/file/Memoria%20de%20actividades%20AERESS%202016.pdf">http://www.aeress.org/content/download/6522/50074/file/Memoria%20de%20actividades%20AERESS%202016.pdf</a>)</p> <p>PLAN DE RESIDUOS DE NAVARRA 2017-2027</p> <p>(<a href="http://www.gobiernoabierto.navarra.es/sites/default/files/participacion/prn_2027_resumen_ejecutivo_cas.pdf">http://www.gobiernoabierto.navarra.es/sites/default/files/participacion/prn_2027_resumen_ejecutivo_cas.pdf</a>)</p>
Sweden	Yes	<p>Tillsammans vinner vi på ett giftfritt och resurseffektivt samhälle — Sveriges program för att förebygga avfall 2014-2017</p> <p>(<a href="https://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6654-3.pdf?pid=14439">https://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6654-3.pdf?pid=14439</a>)</p>
United Kingdom		
England <sup>(a)</sup>	Yes	<p>Prevention is better than cure — The role of waste prevention in moving to a more resource efficient economy</p> <p>(<a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265022/pb14091-waste-prevention-20131211.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265022/pb14091-waste-prevention-20131211.pdf</a>)</p>
Northern Ireland <sup>(a)</sup>	Yes	<p>The waste prevention programme for Northern Ireland — The road to zero waste</p> <p>(<a href="https://www.daera-ni.gov.uk/sites/default/files/publications/doe/waste-prevention-programme-ni-road-zero-waste-2014.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/doe/waste-prevention-programme-ni-road-zero-waste-2014.pdf</a>)</p>
Scotland <sup>(a)</sup>	Yes	<p>Zero Waste Scotland: 'Making Things Last' – A Circular Economy Strategy for Scotland</p> <p>(<a href="http://www.gov.scot/Resource/0049/00494471.pdf">http://www.gov.scot/Resource/0049/00494471.pdf</a>)</p>
Wales (a)	Yes	<p>Towards Zero Waste – One Wales: One Planet. The Overarching Waste Strategy Document for Wales</p> <p>(<a href="http://gov.wales/docs/desh/publications/100621wastetowardszeroen.pdf">http://gov.wales/docs/desh/publications/100621wastetowardszeroen.pdf</a>)</p>

**Note:** <sup>(a)</sup> Region; <sup>(b)</sup> concluded from [http://uest.ntua.gr/cyprus2016/proceedings/pdf/prastitou\\_final.pdf](http://uest.ntua.gr/cyprus2016/proceedings/pdf/prastitou_final.pdf) and <https://ec.europa.eu/info/sites/info/files/2017-european-semester-national-reform-programme-cyprus-en.pdf>; no access to original document.

## A1.2 General waste prevention programmes objectives related to reuse

1	Austria	<ul style="list-style-type: none"> <li>• Further expansion and consolidation of the re-use networks in the federal states</li> <li>• Expansion of the re-use collection of old electrical appliances in the communities</li> <li>• Expansion of the re-use collection to other usable goods</li> <li>• Creation of further markets for re-use products (p. 25)</li> </ul>
2	Belgium (Brussels)	Not specifically referring to reuse
3	Belgium (Flanders)	<ul style="list-style-type: none"> <li>• '1. The prevention program for sustainable material management in the building sector has five objectives: [...] design should enable reuse of materials'</li> </ul>
4	Bulgaria	Not specifically referring to reuse
5	Croatia	<ul style="list-style-type: none"> <li>• Establish re-use centres</li> </ul>
6	Cyprus	Information not accessible
7	Czech Republic	<ul style="list-style-type: none"> <li>• '10. Support reuse and service centers and charitable organisations to repair and reuse products and materials (mid-term and continuous)'</li> </ul>
8	Denmark	<ul style="list-style-type: none"> <li>• 'Simplify the reuse and recycling of electronics and electronic waste, so that the life of these products is extended and they are better integrated into the circular economy (p. 45)'</li> <li>• The Government's objective is to make it easier for textile businesses to reduce their environmental impact during the manufacturing phase and make it easier to reuse and recycle textiles, e.g. by reducing the use of substances of concern in textiles (p. 40)</li> </ul>
9	Estonia	<ul style="list-style-type: none"> <li>• 'Estonian consumers are aware of the possibilities for prevention and are willing and able to contribute to waste prevention and reuse'</li> <li>• 'The Estonian legal environment favours the prevention of waste, including reuse (p. 13)'</li> </ul>
10	Finland	<ul style="list-style-type: none"> <li>• 'Long term target 2030: Waste quantities have decreased from the present. Re-use and recycling have risen to a new level. The recycling market works well. Re-use and recycling create new jobs.'</li> </ul>
11	France	Not specifically referring to reuse
12	Germany	<ul style="list-style-type: none"> <li>• 'Extending life span of products; support for reuse of products; increasing use intensity of products (pp. 20-21)'</li> </ul>
13	Greece	<ul style="list-style-type: none"> <li>• 'Promoting the reuse of electrical and electronic equipment'</li> </ul>
14	Hungary	Not specifically referring to reuse
15	Iceland	Not specifically referring to reuse
16	Ireland	<ul style="list-style-type: none"> <li>• 'Support sustainable growth and employment in the green economy — including reuse enterprises'</li> </ul>
17	Italy	Not specifically referring to reuse
18	Latvia	Not specifically referring to reuse
19	Lithuania	Not specifically referring to reuse
20	Luxembourg	<ul style="list-style-type: none"> <li>• 'The aim is to prevent waste and to guide consumers towards products with greater longevity or multiple uses (p. 29)'</li> </ul>
21	Malta	<ul style="list-style-type: none"> <li>• 'Promoting re-use and repair initiatives'</li> </ul>
22	Netherlands	Not specifically referring to reuse
23	Norway	Unspecified
24	Poland	<ul style="list-style-type: none"> <li>• 'Increased reuse, for example by means of networks for the exchange and repair of electrical and electronic equipment and by collecting and preparing WEEE for reuse'</li> </ul>
25	Portugal	<ul style="list-style-type: none"> <li>• 'The amount of waste produced by the reduction of material resources and energy used and by encouraging their reuse and therefore reducing the amount of waste sent to landfill'</li> </ul>
26	Slovakia	Not specifically referring to reuse
27	Slovenia	<ul style="list-style-type: none"> <li>• 'Re-use of items, materials or products'</li> </ul>
28	Spain	<ul style="list-style-type: none"> <li>• 'Reuse of furniture, clothing and textiles as well as electronic equipment (p. 27)'</li> </ul>
29	Sweden	Unspecified

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## A1.2 (cont.) General waste prevention programmes objectives related to reuse

30	United Kingdom (England)	<ul style="list-style-type: none"> <li>• 'Encourage a culture of valuing resources by making it easier for people and businesses to find out how to reduce their waste, use products for longer, repair broken items and enable the reuse of items by others'</li> </ul>
31	United Kingdom (Northern Ireland)	<ul style="list-style-type: none"> <li>• 'Engage with partners to influence supply chains'</li> <li>• Develop new business models to assist re-use businesses.</li> <li>• 'Promote re-use assurance standards (p. 5)'</li> <li>• 'The expansion of re-use and repair networks will promote the development of social enterprises at a community level and stimulate opportunities for green jobs. The waste prevention forum planned in 2014 will have a particular focus on establishing a repair and reuse network across Northern Ireland (p. 33)'</li> </ul>
32	United Kingdom (Scotland)	<ul style="list-style-type: none"> <li>• 'Want sale and use of second hand goods to be seen as an attractive, mainstream, good value option for an increasing range of products'; 'want reuse businesses and community organisations to thrive'; 'want major industrial sectors to learn from best practice to optimise the value of used equipment and infrastructure (p. 17)'</li> </ul>
33	United Kingdom (Wales)	<ul style="list-style-type: none"> <li>• 'Helping householders and businesses to reduce their quantity of waste through reuse or the extension of the life span of products (p. iv)'</li> <li>• 'Stimulating a culture of change towards a resource-efficient society, influencing behaviour through awareness raising, education and skills development (pp. 16-17)'</li> </ul>

### A1.3 Quantitative reuse targets

1	Austria	None
2	Belgium (Brussels)	Not specifically referring to reuse
3	Belgium (Flanders)	<ul style="list-style-type: none"> <li>5 kg sold of reused products in Flanders by 2015 — target achieved (new target: 7 kg by 2022)</li> </ul>
4	Bulgaria	Not specifically referring to reuse
5	Croatia	None
6	Cyprus	Information not accessible
7	Czech Republic	None
8	Denmark	None
9	Estonia	Not specifically referring to reuse
10	Finland	Not specifically referring to reuse
11	France	Not specifically referring to reuse
12	Germany	Very unspecified
13	Greece	None
14	Hungary	None
15	Iceland	None
16	Ireland	Very unspecified
17	Italy	Not specifically referring to reuse
18	Latvia	Not specifically referring to reuse
19	Lithuania	Not specifically referring to reuse
20	Luxembourg	None
21	Malta	Not specifically referring to reuse
22	Netherlands	Not specifically referring to reuse
23	Norway	In development, but not specifically referring to reuse
24	Poland	None
25	Portugal	Not specifically referring to reuse
26	Slovakia	Not specifically referring to reuse
27	Slovenia	None
28	Spain	<ul style="list-style-type: none"> <li>By Royal Decree 110/2015, Spain introduced a 'preparation for reuse target' for two collection groups, large EEE and small IT and telecommunications equipment, in the national legislation transposing the WEEE Directive (2012/19/EU), namely (1) from 1 January 2017 until 14 August 2018, 2 % of preparation for reuse of category 4 and 3 % of preparation for re-use of category 6; (2) from 15 August 2018, 3 % preparation for re-use of category 4 and 4 % preparation for re-use of category 6</li> </ul>
29	Sweden	<ul style="list-style-type: none"> <li>'The proportion of total sales of textiles made up of sales of second-hand goods shall increase compared with 2014 (p. 46)'</li> </ul>
30	United Kingdom (England)	Not specifically referring to reuse
31	United Kingdom (Northern Ireland)	Not specifically referring to reuse
32	United Kingdom (Scotland)	Not specifically referring to reuse
33	United Kingdom (Wales)	Not specifically referring to reuse

## A1.4 Reuse indicators

1	Austria	<ul style="list-style-type: none"> <li>'Reuse: Collected quantity of reusable products per year, number and turnover of reuse companies, number of second-hand products sold annually, rate of reuse of construction waste'</li> </ul>
2	Belgium (Brussels)	In development
3	Belgium (Flanders)	Directly referring to quantitative targets
4	Bulgaria	<ul style="list-style-type: none"> <li>'Reuse of appliances: reuse old equipment in relation to the amounts of old appliances reported, the types of appliances and the change from the previous year to the year in question'</li> <li>'Reuse of packaging: the amount of used packaging in multiple species when taking into account the total amount of the relevant packaging'</li> <li>'16. number of reused products, number of events using reusable utensils and prevented waste, number of visits to state owned sites linking merchandising and reuse to the sites, number of sales made as a result of these visits' (p. 75)</li> </ul>
5	Croatia	<ul style="list-style-type: none"> <li>The number of newly opened workplaces dealing with waste reuse</li> </ul>
6	Cyprus	Information not accessible.
7	Czech Republic	<p>The amount of collected textiles, footwear and selected reusable products, t/year'</p> <ul style="list-style-type: none"> <li>'Number of service centers and network for life extension and reuse of products and components. Number of products that have gone through service centers and were reused'</li> <li>The number of non-profit organisations developing activities for re-use of products and activities related to waste prevention</li> </ul>
8	Denmark	<ul style="list-style-type: none"> <li>'Consumption of clothes and textiles, including second-hand clothes'</li> </ul>
9	Estonia	<ul style="list-style-type: none"> <li>'Quantity of waste prepared for reuse'</li> </ul>
10	Finland	<ul style="list-style-type: none"> <li>EEE reuse volume, tonne/year</li> </ul>
11	France	Not specifically referring to reuse
12	Germany	<ul style="list-style-type: none"> <li>'Share of reused electronic products'</li> <li>'Share of reusable packaging'</li> </ul>
13	Greece	<ul style="list-style-type: none"> <li>'Number of reuse centres'</li> <li>'Share of reusable packaging'</li> </ul>
14	Hungary	<ul style="list-style-type: none"> <li>'The reuse rate of materials originating from construction and demolition waste (%)'</li> <li>'The number of accredited reuse centres'</li> <li>'The size of the population served by the reuse centres (the number of individuals)'</li> <li>'The number of second-hand products transferred to accredited reuse centres'</li> <li>'The proportion of marketed second-hand products compared with the number transferred to accredited reuse centres'</li> <li>The proportion of 'green' items in the criteria of the public procurement system compared to all the criteria (%)</li> <li>Number of enterprises that introduce and apply ISO 14001</li> <li>Number of enterprises that introduce and apply EMAS (pc.)</li> <li>Number of students educated on the prevention of waste generation</li> <li>Number of occurrence waste prevention events (pc.)</li> </ul>

## A1.4 (cont.) Reuse indicators

15	Iceland	<p>Indicators on drink packaging:</p> <ul style="list-style-type: none"> <li>'The proportion of reusable packaging of the total packaging bearing a recycling deposit'</li> </ul> <p>Indicators on reducing plastic waste:</p> <ul style="list-style-type: none"> <li>'The amount of imported and produced plastic packaging that carry a recycling fee, adjusted for population and GDP at constant prices. Data available at the Icelandic Recycling Fund, a governmental agency in charge of reducing waste by creating conducive economic conditions for reuse and recovery and ensuring the proper disposal of hazardous substances'</li> </ul>
16	Ireland	Not specifically referring to reuse
17	Italy	<ul style="list-style-type: none"> <li>'Number of products that enter and leave a reuse centre, and number of visits made to reuse centres (pp. 27-28)'</li> </ul>
18	Latvia	Not specifically referring to reuse
19	Lithuania	None
20	Luxembourg	None
21	Malta	None
22	Netherlands	Not specifically referring to reuse
23	Norway	None
24	Poland	<ul style="list-style-type: none"> <li>'Percentage of packaging placed on the market that is reusable'</li> <li>'Percentage of the total mass of waste equipment collected in a given year that is totally reused'</li> </ul>
25	Portugal	Not specifically referring to reuse
26	Slovakia	Not specifically referring to reuse
27	Slovenia	Not specifically referring to reuse
28	Spain	<ul style="list-style-type: none"> <li>'Number of operative reuse centres and number of associated new jobs'</li> </ul>
29	Sweden	In development (referring specifically to quantitative targets — reuse)
30	United Kingdom (England)	Not specifically referring to reuse
31	United Kingdom (Northern Ireland)	Not specifically referring to reuse — in development
32	United Kingdom (Scotland)	Not specifically referring to reuse
33	United Kingdom (Wales)	Not specifically referring to reuse

## A1.5 Reuse target groups

1	Austria	'Aimed at a wide variety of target groups, including people involved in the design of products, people involved in producing goods and providing services, consumers and all stakeholders within the waste management sector'  'Also reaches out to the educational system, public administration and the research and development sector'; only within Austria
2	Belgium (Brussels)	'General public and professionals'
3	Belgium (Flanders)	Sectors covered: agriculture; construction and infrastructure; manufacturing; sale, retail, and transport; households; private service activities/hospitality; public services  Prevention of waste types: food/organic; construction and demolition waste; hazardous waste; household/municipal waste; paper; packaging; waste electrical and electronic equipment/batteries; bulky waste
4	Bulgaria	'State, municipalities, economic and scientific entities, NGOs and households (p. 52-53)'
5	Croatia	Not specified
6	Cyprus	Information not accessible.
7	Czech Republic	'Public consumers, businesses and local authorities'
8	Denmark	'Consumers, corporate actors and retailers (p. 8), particularly in the sectors of construction, food, textiles, electronics, and packaging (p. 9)'
9	Estonia	'Businesses, consumers and legal authorities (pp. 14-15)'
10	Finland	'Consumers, producers, authorities, industry, production and the construction sector'
11	France	'Adults, workers, those in both the private and public sectors, households, workshops and those involved in commerce'
12	Germany	'Wide group of different actors alongside the value chain, beginning from the production of products, retailers, logistics, consumers and also actors in the waste management system inter alia with regard to collection for reuse or waste fees'
13	Greece	'Ministry of Environment and Energy itself as well as households, companies and the public sector'
14	Hungary	None specifically mentioned, but: 'The goals set in the National Waste Prevention Programme can only be implemented through a broad and active participation of the society and the economy.'
15	Iceland	'Households, private and the public sector'
16	Ireland	Sectoral approach; example targets of specific programs: 'hospitality and catering managers, business managers, healthcare sector managers, farmers, small business owners, householders, consumers and communities'
17	Italy	'Industry, the public sector, consumers, non-governmental organisations, the catering sector, commerce, private sector, and the construction and demolition sector'
18	Latvia	None
19	Lithuania	'wide range of different actors along the value chain, for instance municipalities and authorities, waste holders — both natural and legal persons — trade associations, farmers and others'
20	Luxembourg	'Defined in relation to each of the waste streams'; 'vary widely'
21	Malta	Not specified; 'wide group of different actors alongside the value chain, for instance municipalities and companies. It especially underlines the specific responsibility of consumers (p. 176)'
22	Netherlands	Not specified; 'extends to all sectors, designers and service providers, governments and individuals (p. 9)'
23	Norway	'Authorities, NGOs and public'
24	Poland	Not specified; 'whole value chain, including the mining and raw materials sector, production, distribution, consumption and end-of-life'

## A1.5 (cont.) Reuse target groups

25	Portugal	'Supply side: designers, manufacturers, distributors, retailers and service providers'  Demand side: citizens and different communities  Governance/regulatory system: local, regional and central levels
26	Slovakia	'All levels, from individual to national'; 'Particular attention is paid to raising public awareness (one of the main measures) and to raising awareness of municipalities relating to waste prevention in general, municipal waste, packaging waste and biodegradable waste (pp. 33, 39 and 44)'
27	Slovenia	'Broad range of stakeholders including industry, trade and households and considers all actors from production through consumption and to society, including costumers, suppliers, destinations, contractors and employees'
28	Spain	'Producers, the distribution sector, the services sector; consumers and end users; public administration'
29	Sweden	'Actors in the value chain'; 'decision-makers, namely managers and politicians at various levels, legislators, business leaders, trade associations, municipalities and authorities (p. 8)'
30	United Kingdom (England)	'Everyone in the supply chain, from those extracting raw materials to the designers, manufacturers, distributors, retailers and consumers, as well as those managing the collection and processing of waste'
31	United Kingdom (Northern Ireland)	'A wide range of organisations, from businesses exchanging surplus materials through to individuals making donations to charitable organisations'
32	United Kingdom (Scotland)	'Particular emphasis on businesses that produce waste but the concept of making things last addresses a wide group of actors along the value chain, starting from manufactures, retailers, public organisations, consumers and those invested in the waste management and collecting systems (p. 2)'
33	United Kingdom (Wales)	'Wide group of actors along the value chain, starting from manufacturers and including retailers and wholesalers, individual and business consumers, and those involved in the waste management and collecting system'

## A1.6 Reuse measures

1	Austria	<b>Directive 2008/98, Annex IV</b> <ul style="list-style-type: none"> <li>• '2. Pilot projects for selective demolition and reuse of construction materials (p. 230).'</li> <li>• '16. Support for reuse networks; development of networking platforms for the reuse and waste sectors (p. 236).'</li> </ul> <b>Not covered by Annex IV</b> <ul style="list-style-type: none"> <li>• 'Development of insurance packages for reuse organisations (p. 236).'</li> </ul>
2	Belgium (Brussels)	<b>Quantitative prevention</b> <ul style="list-style-type: none"> <li>• Gadgets: 'Studying and drawing attention to problems related to the life expectancy and reparability of products on the market.'</li> <li>• Construction and Demolition Waste (p. 38): 'Promoting renovation rather than new construction.'</li> </ul> <b>Directive 2008/98, Annex IV</b> <ul style="list-style-type: none"> <li>• '2. The necessary studies will be commissioned to identify materials and techniques that inhibit disassembly, reuse and recycling of construction materials, in order to propose alternatives (p. 36).'</li> <li>• '16. The management of bulky waste collected door-to-door and at waste reception centers will be studied, in order to evaluate the reusable waste fractions by material types and identify priorities for action (p. 20).'</li> </ul>
3	Belgium (Flanders)	<b>Qualitative prevention/Directive 2008/98, Annex IV</b> <ul style="list-style-type: none"> <li>• Measure 4: 'In all current EPR schemes in Flanders, the stakeholders involved are obliged to submit yearly reports on their initiatives to prevent waste (e.g. through product reuse, prevention initiatives and efforts to extend the lifespan of products put on the market or to improve quality of the products).'</li> <li>• Measure 6: 'A network of 118 reuse and repair centers, also called resale shops, have been established and subsidized in order to give products a second life.'</li> </ul>
4	Bulgaria	<b>Quantitative prevention</b> <ul style="list-style-type: none"> <li>• 'Reduction of patent taxes for SMEs whose activities lead to the reuse of a product (e.g. repair of shoes, furniture, clothing etc.) (p. 68).'</li> <li>• 'Logistical and/or organizational assistance to repair centres, including sales and deliveries to such centres (p. 74).'</li> <li>• 'Creation of legislation to use reusable utensils in contracts between the state and municipal administration and catering companies (p. 75).'</li> </ul> <b>Directive 2008/98, Annex IV</b> <ul style="list-style-type: none"> <li>• '8. [...] Determining a license tax, following local Taxes and Fees Act guidelines, for those whose activity directly leads to the reuse of some products (e.g. shoe repair, furniture, clothes, household appliances, etc.).'</li> <li>• 'Creating and maintaining a national website, incorporating regional information on the location and availability of second-hand construction materials.'</li> <li>• '16. Municipalities to establish public registers in order to provide public information on the services provided for repairs and maintenance in the municipality, leading to longer product life and corresponding to waste prevention.'</li> <li>• 'Creation and maintenance of a national website with information on construction materials from demolition or repairs that can be reused and also on recycled materials.'</li> <li>• 'Elaboration of rules for projects focusing on acquiring or improving skills to repair and maintain products. Subsequent implementation of related projects'</li> <li>• 'Elaboration of rules for the funding of companies that create jobs associated with the repair and maintenance of products. Subsequent implementation of related projects (p. 76-86).'</li> </ul>

## A1.6 (cont.) Reuse measures

5	Croatia	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'1 Encouraging re-use of demolition material. It is important to establish subsidies for re-use of demolition material.'</li> <li>'10: Encouraging exchange and re-use of used products through re-use corners and centres, guidelines, an internet portal, a campaign, etc.'</li> </ul>
6	Cyprus	Information not accessible.
7	Czech Republic	<p><b>Quantitative prevention</b></p> <p>Information, support, and awareness:</p> <ul style="list-style-type: none"> <li>'2. Technically ensure the dissemination of information and awareness programs for the progressive increase in the number of collecting further useful products, e.g. textiles, clothing, footwear, toys, books, furniture, carpets, tools and other reusable products. Publicly promote NGO activities retroactively withdrawing products for reuse and similar bodies and ensure the creation of interactive publicly accessible networks (maps) of these organisations and centers (p. 76).'</li> </ul> <p>Control and planning:</p> <ul style="list-style-type: none"> <li>'10. Develop technical analysis for the possibility of establishing new legislative requirements and objectives for waste prevention in the Czech Republic with regard to the development of EU legislation, including the determination of the legislative requirements for the operation of facilities for the reuse of products at end of life (p. 78).'</li> </ul> <p>Methodological support and voluntary tools:</p> <ul style="list-style-type: none"> <li>'1. Promote the consideration of environmental aspects with a focus on waste prevention in the procurement of public budgets, for example.'</li> </ul> <p>Take into account requirements for environmental management systems, environmental labelling of products and services, preference for reusable containers and others.</p> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'12., 16. Technically ensure the dissemination of information and awareness programs for the progressive increase in the number of collecting further useful products, e.g. textiles, clothing, footwear, toys, books, furniture, carpets, tools and other reusable products. Publicly promote NGO activities retroactively withdrawing products for reuse and similar bodies and ensure the creation of interactive publicly accessible networks (maps) of these organisations and centers (p. 76).'</li> <li>'2., 8. Ensure the establishment of an expert study on the possibilities of financial incentives for firms using the production of secondary raw materials and its innovative technology with the aim of increased use of secondary raw materials in production. Create an interdepartmental plan for increased use of secondary raw materials in production (p. 79).'</li> <li>'2., 6., 8. Develop a professional study on the use of various construction material units of demolished buildings to the original or other purposes while maintaining the functionality of the material (p.81).'</li> <li>'15. Promote the consideration of environmental aspects with a focus on waste prevention in the procurement of public budgets, for example. Take into account requirements for environmental management systems, environmental labelling of products and services, preference for reusable containers and others.'</li> </ul>

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## A1.6 (cont.) Reuse measures

8	Denmark	<b>Directive 2008/98, Annex IV</b>
		Resource-efficient consumption:
		<ul style="list-style-type: none"> <li>• '12. Publish guides to sharing mechanisms in Denmark.'</li> <li>• '15. Develop a guide to how public procurement can be used to support a circular economy and prevent waste, for example by requiring durability and products that can be repaired.'</li> </ul>
		Building and construction:
		<ul style="list-style-type: none"> <li>• '2., 16. An economic analysis of the reuse of bricks.'</li> </ul>
		Clothing and textile:
		<ul style="list-style-type: none"> <li>• '14. A partnership with companies and organisations with the slogan "Give your clothes a longer life".'</li> </ul>
		Electronics:
		<ul style="list-style-type: none"> <li>• '16. An analysis of the opportunities for and barriers to promoting recycling and repair of electronic waste.'</li> <li>• '16. Mapping the potential for reuse and repair of electronic waste deposited at recycling facilities.'</li> </ul>
9	Estonia	<b>Directive 2008/98, Annex IV</b>
		<ul style="list-style-type: none"> <li>• '15. Development of reuse centres and other prevention initiatives (e.g. a food bank and collections of used clothing).'</li> <li>• 'Analysis of regulatory actions to promote waste prevention and reuse (p. 15).'</li> <li>• '1. and 2. Analysis of regulatory actions to promote waste prevention and reuse (p. 15).'</li> <li>• '5. and 8. Projects on waste prevention and recycling (including preparation for reuse), promoting and supporting collaborative platforms (so-called industrial symbiosis, where one company uses another's waste or by-products as a resource) (p. 5).'</li> <li>• '1. and 11. Economic instruments to encourage the development of waste prevention and reuse activities (p. 6).'</li> </ul>
10	Finland	<b>Directive 2008/98, Annex IV</b>
		<ul style="list-style-type: none"> <li>• '15. Incorporate minimum requirements for product durability, updatability, reparability and other material efficiency features into public procurement processes (p. 12).'</li> <li>• '16. Promote reuse of reusable, repairable and updatable products and building components in a collaborative effort involving municipalities, producer companies, the voluntary sector and employment authorities (p.12).'</li> <li>• Promote building maintenance and material-efficient building renovation (p. 13).</li> <li>• Examine the need for, opportunities for and benefits of providing a more extensive household deduction in connection with (i) maintenance and repair services aimed at extending the useful life of household appliances, furniture and other consumer durables, and (ii) the purchase of renovation design services (p. 15).</li> <li>• 'Municipalities are to promote small repair service businesses by offering them low-cost premises and publicity (p. 15).'</li> <li>• Studying and introducing economic instruments to step up the prolongation of product lifespans.</li> <li>• Directing research and experimentation funding to prolonging the lifespan of EEE and enabling its re-use.</li> <li>• Strengthening the re-use expertise of actors within the producer responsibility system.</li> </ul>

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## A1.6 (cont.) Reuse measures

11 France	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>'[...] at-source waste prevention (i.e. reduction at the source), where a life-cycle approach should be taken; targeting the product when it reaches the end of its life, so that it is not discarded (avoiding waste); stimulating fundamental change in product design by extending a product's lifetime or considering options such as reuse (diverting waste).'</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'3. Monitoring of the number of reuse/repair centres (p. 51).'</li> <li>'4. Increase the role of the producer responsibility organisations in promoting the concept of eco-design (pp. 34-35) and the practice of reuse (p. 36).'</li> <li>'Development of a common technical vocabulary concerning the lifespan of products (p. 38).'</li> <li>'Improvement of guaranteeing and increasing the lifespan of products (pp. 39-40).'</li> <li>'9. Measures to reduce the use of single use plastic bags (p. 66).'</li> <li>'11. Development, when it is relevant, of the system of the returnable package with the aim of a re-use (p. 55).'</li> <li>'14. Promotion of reuse and repair centres (p. 52).'</li> <li>'Facilitation of the access and the availability of spare parts to repair the products (pp. 53-54).'</li> <li>'16. Promotion of the practice of reuse and reparation (p. 51).'</li> <li>'Facilitation of the access and the availability of spare parts to repair the products (pp. 53-54).'</li> <li>'Facilitation of the collection and access to reusable products (p. 54).'</li> </ul>
12 Germany	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>'A variety of measures that implicitly aim at the quantitative reduction of waste: reuse of products, e.g. electronic products or furniture (p. 29)[...]</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'16. Reuse shall be supported by awareness-raising campaigns and information on all spatial levels and especially by the support for quality labels and standards.'</li> </ul>
13 Greece	<p><b>Directive 2008/98, Annex IV</b></p> <p>Paper:</p> <ul style="list-style-type: none"> <li>'Events in order to support the reuse of books (e.g. book bazaar)'</li> <li>'Promoting the reuse of books in the primary, secondary and tertiary education sectors (done by the Ministry of Education).'</li> </ul> <p>Packaging:</p> <ul style="list-style-type: none"> <li>'Selective distribution of reusable bags by OTA.'</li> </ul> <p>Electrical and electronic equipment:</p> <ul style="list-style-type: none"> <li>'Promotion of reuse and repair of electrical and electronic equipment through reuse and repair centres.'</li> <li>'Development of a web application and website that allows consumers to give away unwanted equipment to third parties.'</li> </ul>

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## A1.6 (cont.) Reuse measures

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14 Hungary	<p><b>Quantitative prevention</b></p> <p>1. Prevention of the generation of construction and demolition waste:</p> <ul style="list-style-type: none"> <li>• 'Increasing the lifespan of buildings that have lost their functions and redefining their functions.'</li> <li>• 'Transforming the construction materials' classification system (including the permitting of materials intended for reuse).'</li> <li>• 'Widespread dissemination of selective demolition.'</li> <li>• 'Determination of a mandatory installation percentage for green public procurement.'</li> </ul> <p>2. Reuse:</p> <ul style="list-style-type: none"> <li>• 'Establishing technical working groups for analysing the general framework of reuse'</li> <li>• 'Elaborating the accreditation system for reuse centres'</li> <li>• 'Establishing reuse centres'</li> <li>• 'Providing financial sources for the development of the reuse network'</li> <li>• 'Establishing conditions for the social-based distribution of products suitable for reuse'</li> <li>• 'Communication campaigns'</li> <li>• 'Coordination (pp. 254-257)'</li> </ul> <p>3. Environmentally conscious production and corporate operation:</p> <ul style="list-style-type: none"> <li>• 'Incentivise the development and application of tools, systems that provide companies with more environmentally conscious operation.'</li> <li>• 'Support research and development, eco-innovation and eco-design.'</li> </ul> <p><b>Directive 2008/09, Annex IV</b></p> <ul style="list-style-type: none"> <li>• '4. Transforming the construction materials' classification system (including the permitting of materials intended for reuse) (p. 254).'</li> <li>• '4. Increasing the lifespan of buildings that have lost their functions and redefining their functions (pp. 252-254).'</li> </ul>
15 Iceland	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>• 'Increase the categories of beverage containers that carry a refundable deposit'</li> <li>• 'Reduce the use of single-use packaging'</li> <li>• 'Support the reuse of old clothes'</li> <li>• 'Working with beverage manufacturers to reduce of the use of single-use packaging'</li> </ul>
16 Ireland	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>• '12. The EPA-funded Freetrade Ireland website provides a free-of-charge service for members of the public to share/exchange pass on and pick-up unwanted household items (e.g. furniture, toys, garden equipment).'</li> <li>• '16. The SMILE project is an industrial symbiosis project designed to facilitate the exchange of resources between businesses to reduce usage of virgin raw materials and also disposal of process wastes. There were 85 successful synergies recorded in 2015 equating to over 5 000 tonnes of material actually diverted from landfill to recovery/recycling; or diverted from recycling/recovery to reuse/remanufacturing. In total, these synergies combined represent actual costs saving for businesses of over EUR 1.2 million.'</li> </ul>

## A1.6 (cont.) Reuse measures

17	Italy	<p><b>Quantitative prevention</b></p> <p>Waste electrical and electronic equipment:</p> <ul style="list-style-type: none"> <li>'Design electrical and electronic equipment that has a longer lifespan or that is easier to repair and/or reusable (p. 27). Encourage the creation of repair/reuse centres for EEE (p. 27).'</li> </ul> <p><b>Directive 2008/09, Annex IV</b></p> <ul style="list-style-type: none"> <li>'4. EEE is to be designed to have a longer lifespan or to be easier to repair and/or reusable (p. 27).'</li> <li>'16. The need to promote waste prevention is recognised in a regulation that establishes that the Ministry of the Environment should adopt one or more decrees to define the operational modes for constituting and sustaining accredited reuse and repair centres and networks. At the time of writing of the programme, these decrees were being developed by the Ministry of the Environment (p. 16).'</li> </ul>
18	Latvia	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'16. Examine the possibility of organising a system for collection of used textiles from households and textile by-products from textile businesses for reuse and recycling (p. 126).'</li> <li>'16. Support businesses (especially small and medium-sized enterprises) in the reuse and/or preparation for reuse/repair operations (p. 127).'</li> <li>'16. Assess whether it is possible for state and local authorities to promote the reuse of old electrical and electronic equipment or to use some of their parts as spare parts, and encourage such behaviour as much as possible (p. 127).'</li> <li>'16. Public education, calling on the individual responsible to choose more environmentally friendly products and promoting sustainable consumption, which would reduce the consumption of goods, as well as promoting citizens' involvement in the reuse of products (p. 127).'</li> </ul>
19	Lithuania	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>'Reuse of products'</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'9. and 14. Initiate agreements with the trade sector in order to protect and develop the existing reuse systems for packaging, thus reducing waste generation'</li> <li>'16. Provide support for waste prevention and preparation for reuse projects'</li> </ul> <p><b>Not covered by Annex IV</b></p> <ul style="list-style-type: none"> <li>'Prepare a law on waste management and accompanying implementing legislation and amendments in order to establish requirements for reuse and preparation for reuse operations.'</li> </ul>
20	Luxembourg	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>'Waste prevention measures focus on increasing use of multiple-use packaging through the development of sector-specific projects (e.g. introduction of eco-bags and multi-use cups at major social events) (p. 125).'</li> <li>'One waste prevention measure mentioned raising public awareness in an effort to reduce purchases of such equipment (the public are encouraged to use these products for as long as possible). SuperDrecksKëscht is mentioned as key actor in the organisation of these awareness campaigns. Another measure is encouraging people to use repair practices, through communication about and promotion of existing repair services, and also through the creation of agreements with producers to facilitate customer access to repair services or through the creation of repair points in WEEE recycling centres, which can then distribute the reconditioned equipment through second-hand shops (p. 162).'</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'16. The reuse and repair as appropriate of discarded WEEE is promoted through the use of educational campaigns and the establishment of repair and reuse centres (p. 162).'</li> </ul>

## A1.6 (cont.) Reuse measures

21 Malta	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'16. Outreach activities to support community reuse initiatives involving the transfer of goods which are no longer required by one person and which may be reused by another. This prolongs the life of the object and prevents it entering the waste stream at an earlier stage.'</li> <li>'Promoting loan and hire behaviours as a means to enhance the frequent reuse of common items without the need for their re-creation and which may eventually contribute to increased waste arisings.'</li> </ul>
22 Netherlands	<p><b>Quantitative prevention</b></p> <p>Activities for conscious consumption: [...]</p> <ul style="list-style-type: none"> <li>Less waste in the consumption phase: information about the potential for longer use of products; [...]</li> <li>Repair, distribution and sale of products: reinforcement of the infrastructure for reuse, for optimal capture of goods and to improve their performance; [...]</li> <li>New business models, hiring and leasing: collection and promotion of positive experiences'</li> </ul> <p>Activities concerning prioritised waste streams:</p> <ul style="list-style-type: none"> <li>Construction and demolition waste:</li> <li>'Reuse of construction materials'.</li> <li>Textile and carpets: 'Less waste through encouraging separate collection and increased reuse'.</li> <li>Electrical appliances: 'Examination of the possibilities for life extension through repair. Reusing products: examination of the development of an assessment system for 'sustainable collectors'.</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'16. Promoting methods for sustainable construction, more standardisation, reuse of construction materials (p. 16).'</li> <li>'16. Less textile waste through encouraging separate collection and increased reuse (p. 17).'</li> <li>'16. Reusing electrical appliances: examination of the development of an assessment system for 'sustainable collectors' (p. 18).'</li> <li>'16. Repair, distribution and sale of products: reinforcement of the infrastructure for reuse, for optimal capture of goods and to improve their performance.'</li> </ul> <p><b>Not covered in Annex IV</b></p> <ul style="list-style-type: none"> <li>'New business models, hiring and leasing: collection and promotion of positive experiences (p. 16).'</li> </ul>
23 Norway	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'12. Awareness campaigns and information provision will be organised, targeting the general public, in relation to reuse, green products and the negative effects on the environment of large-scale consumption (p. 36).'</li> <li>'16. Reuse and/or repair of appropriate discarded products will be encouraged at recycling centres (gjenvinningsstasjonene) (p. 36).'</li> </ul>
24 Poland	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'Carrying out research and demonstration projects in the field of waste prevention technologies and disseminating research outcomes, with the following projects on the following themes as priorities: (1) combating food waste; (2) reuse; developing networks for the repair of electrical and electronic equipment, furniture, toys, bicycles, etc.; (3) research and development focusing on modern construction materials and the use of recyclable materials; and (4) modern manufacturing technologies that eliminate waste generation (pp. 44-45; point 2 in the annex IV of the Waste Framework Directive).'</li> <li>'Promoting and supporting the development of networks of repair and reuse centres by setting economic incentives and strengthening the market for second-hand products through the development of quality standards for second-hand products (pp. 51-52; point 16 in the annex IV of the Waste Framework Directive).'</li> </ul>

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## A1.6 (cont.) Reuse measures

25 Portugal	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>'Promoting the conception of new products and packages with environmental criteria (eco-design), stimulating the supply of new products that will lead to less urban waste production and hazardous substances, namely:             <ol style="list-style-type: none"> <li>Increase product durability</li> </ol> </li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'4. Promoting minimalist design in packaging and reusable/biodegradable packaging (p. 7676).'</li> <li>'16. Promoting the reuse and repair of products wherever possible (p. 7677).'</li> </ul>
26 Slovakia	<p><b>Quantitative prevention</b></p> <p>Municipal waste:</p> <ul style="list-style-type: none"> <li>'Supporting the establishment of reuse centres for items such as furniture, electrical and electronic equipment, textiles, books, CDs, sports equipment, etc. (p. 39).'</li> </ul> <p>Construction and demolition:</p> <ul style="list-style-type: none"> <li>'Establishing a legal obligation in the C&amp;D sector to use various types of materials in such a way that they can be reused or recycled (p. 45).'</li> <li>'Supporting the establishment of reuse centres and markets for used building materials (p. 46).'</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>'1. Establishment of a legal obligation in the C&amp;D sector to use various types of materials in such a way that they can be reused or recycled (p. 45).'</li> <li>'16. Supporting the establishment of reuse centres for items such as furniture, electrical and electronic equipment, textiles, books, CDs, sports equipment, etc. (p. 39)'</li> </ul>
27 Slovenia	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>Eight priority fields: [...] reuse of bulky waste, reuse of textiles, [...]</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <p>Waste prevention in construction waste:</p> <ul style="list-style-type: none"> <li>'Awareness and education on selective decomposition and re-use of materials'</li> </ul> <p>Waste prevention in enterprises:</p> <ul style="list-style-type: none"> <li>Establishment of 5 new value chains for circular material flows by 2023, such as: efficiency in the reuse of resources; technological and non-technological solutions and possibilities for improving the use of resources in the context of individual sectors; cost-effectiveness of possible solutions; access to databases and comparison tools at European level supported by 'The European Resource Efficiency Excellence Centre'; counselling and financial support for the implementation of these measures.</li> <li>'Further education of responsible actors for waste in enterprises aiming at the identification and use of potentials for prevention and re-use.'</li> </ul> <p>'Re-use — a measure to prevent the formation of bulky waste':</p> <ul style="list-style-type: none"> <li>'Analysis of material flows of bulky waste by individual fractions'</li> <li>'Incentives for reuse'</li> <li>'Raising awareness about re-use (p. 253)'</li> </ul> <p>'Re-use — a measure to prevent waste textiles and clothes':</p> <ul style="list-style-type: none"> <li>'Raising awareness and promoting the reuse of clothing;</li> <li>Incentives for dialogue on enhanced cooperation between producers and importers as well as collectors of used clothing'</li> </ul> <p>'Raising awareness for re-use in schools for education of youth and adults (p. 254).'</p>

## A1.6 (cont.) Reuse measures

28 Spain

### Directive 2008/98, Annex IV

- 'Waste prevention also contributes to the generation of new business and employment opportunities. Waste prevention activities result in new economic activities relating to reuse, such as repair shops and second-hand markets.'
- '1. Review the packaging regulations to strengthen the prevention of over-packaging, the use of reusable packaging and the marketing of easily recyclable packaging (p. 29).'
- '1. Review the regulations related to electrical and electronic equipment (EEE) to strengthen prevention aspects linked to the restriction of harmful substances in EEE and to foster its ecodesign and reuse, envisaging the possibility of establishing differentiated tariff criteria to finance WEEE management (p. 31).'
- '2. Develop selective demolition techniques (p. 28) and tools to assess the environmental performance of construction materials and their potential for reuse (p. 28).'
- '2. Extend the life of vehicles, tyres and batteries (p. 31).'
- '4. Promote ecodesign for vehicles, to facilitate dismantling and recycling at the end-of-life stage (p. 31).'
- '5. Provide technical support and disseminate knowledge to companies to encourage waste prevention and reuse in C&D activities (p. 29).'
- '5. Promote the provision of information to assist managers in dismantling vehicles and facilitating the reuse of their components (p. 31). (Manager is referred to waste manager which receives the end of life vehicles. Dismantling in this context means disassembling.)'
- '8. Promote the establishment of EEE repair shops (p. 32).'
- '8. and 16. Promote the establishment of repair and second-hand shops for furniture, toys, books and textiles (p. 32).'
- '9. Use voluntary agreements to: [...] promote the use of reusable industrial packaging; promote a reduction in the consumption of single-use bags; promote a reduction in the use of single-use packaging in the catering and hotel sector (p. 29); [...] promote ecodesign of EEE to facilitate repair and extend life (p. 31); promote information aimed at facilitating the repair and reuse of EEE components and to provide information to citizens about the products' characteristics related to their management as waste (p. 31); and increase the reuse of EEE components in the professional field (p. 31).'
- '12. Develop education and/or awareness campaigns to: [...] incorporate prevention and particularly reuse into minor construction projects (p. 29); emphasise the role that consumers and final users have in packaging waste reduction and reuse (p. 29); promote the use of products equivalent to single-use/disposable items that can be reused or have a longer life (p. 30); improve the delivery of used EEE to reuse centres and increase consumption (p. 32); encourage the delivery of furniture, toys, books and textiles to reuse centres and their resale (p. 32).'
- '14. Create voluntary agreements to use reusable commercial packaging in the hotel and catering sector (pp. 29-30).'
- '15. Include conditions in public procurement documentation to promote the reduction of packaging consumption and the use of reusable or refillable packaging (p. 30).'
- '16. Promote pilot projects involving the substitution of single-use/disposable items with other products with a longer life (p. 30).'
- '16. Promote the use of rechargeable batteries (p. 31).'
- '16. Promote the reuse of parts or components of vehicles (p. 31).'
- '16. Promote the use of second-hand or repaired tyres, provided that safety and quality can be guaranteed (p. 31).'
- '16. Promote the establishment of used EEE collection networks, and of second-hand shops and EEE banks, to encourage reuse (p. 32).'

### Not covered by Annex IV

- 'Promote the marketing of products in reusable and refillable packaging (p. 29).'
- 'Promote the development of instruments (such as guarantees, certificates, etc.) to certify the quality of EEE in second-hand markets (p. 32).'

## A1.6 (cont.) Reuse measures

29 Sweden	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>• '2. Participate in campaigns, research projects and networks to increase reuse and contribute to more sustainable textiles (p. 48).'</li> <li>• '4. Within the EU, seek to ensure that environmental aspects such as longer life, reparability and hazardous substances content are considered in the design of new products (p. 68).'</li> <li>• '4. Manufacture, develop, purchase and sell textiles designed for long life, that do not contain hazardous substances and that can be reused and recycled (p. 49).'</li> <li>• '16. Explore the public attitude to reuse of electronics (p. 68).'</li> </ul>
30 United Kingdom (England)	<p><b>Quantitative prevention</b></p> <p>Measures for government:</p> <ul style="list-style-type: none"> <li>• 'Mandate a GBP 0.05 charge on single-use plastic bags (p. 17).'</li> <li>• 'Clarify how the definition of waste can be applied to reuse and repair activities (p. 17).'</li> <li>• 'Introduce a government-wide “swap” shop (p. 18).'</li> <li>• 'Increase confidence in reused goods through the introduction of a reuse quality standard or similar mechanism (p. 18).'</li> <li>• 'Facilitate partnership working across the supply chain to encourage greater reuse and repair (p. 19).'</li> <li>• 'Develop a postcode locator for householders to use to find reuse and repair services (p. 21).'</li> <li>• 'Conduct research into the opportunities and challenges of the repair sector (p. 22).'</li> </ul> <p><b>Qualitative prevention</b></p> <ul style="list-style-type: none"> <li>• 'The Electrical and Electronic Equipment Sustainability Action Plan or ESAP, which aims to catalyse sector action in several areas related to EEE, such as guidance on product design, developing buying specifications aimed at reducing failure rates, optimising product life, and exploring options, e.g. for business models which keep products in circulation for longer, enable repair, etc.'</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <p>2. Research and development:</p> <ul style="list-style-type: none"> <li>• 'Support the business-led Circular Economy Task Force, which looks at ways in which to capture materials for remanufacturing and reuse.'</li> </ul> <p>7. Preventing waste production at installations:</p> <ul style="list-style-type: none"> <li>• 'Provide clarification on the application of the definition of waste to help businesses realise reuse and repair opportunities (p. 17).'</li> </ul> <p>8. Awareness-raising campaigns or providing support for businesses:</p> <ul style="list-style-type: none"> <li>• 'Work with businesses and social enterprises in asset management, repair and reuse sectors to increase capacity, quality of outputs and commercial sustainability (p. 21).'</li> </ul> <p>13. Awareness-raising campaigns and information provided to consumers:</p> <ul style="list-style-type: none"> <li>• 'Development of a postcode locator to enable householders to find their nearest reuse and repair services (p. 21).'</li> </ul> <p>14. Eco-labels:</p> <ul style="list-style-type: none"> <li>• 'Work in partnership with industry to increase consumer confidence in the quality of second-hand goods and on the development of a standard or similar mechanism for the reuse sector (p. 18).'</li> </ul> <p>16. Procurement:</p> <ul style="list-style-type: none"> <li>• 'Include waste prevention and reuse criteria into the Government Buying Standards (pp. 6 and 17).'</li> </ul>

## A1.6 (cont.) Reuse measures

		<p>17. Promoting reuse and repair activities:</p> <ul style="list-style-type: none"> <li>• 'Deliver a 2-year community partnership fund, the Innovation in Waste Prevention Fund, to take forward innovative waste prevention actions (p. 19).</li> <li>• Research pilot studies on trials of take-back schemes for resale and of leasing/hiring schemes (p. 21).</li> <li>• Develop a standard or similar mechanism for reuse (pp. 6, 18 and 23).</li> <li>• Pilot a government-wide 'swap shop' (p. 18).</li> <li>• Work with local authority collection facilities to increase opportunities for EEE reuse (p. 17).</li> <li>• Undertake further research into the opportunities and challenges in the repair sector (p. 22).'</li> </ul>
31	United Kingdom (Scotland)	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>• 'Enlightening the reuse options for consumers by trailing large scale reuse and repair hubs to encourage increased capture rates, to deliver economies of scale for the sector and recognised reuse superstores for consumers; expanding the availability of the Revolve standard to include a wider range of reuse organisations; supporting local authorities and local reuse organisations to improve reuse collection, storage, retail and communications (p. 17).'</li> <li>• 'Support local authorities and local reuse organisations to improve reuse collection, storage, retail and communications, including at Household Waste Recycling Centres and through bulky waste services (p. 17).'</li> <li>• 'Introducing collaborative approaches to re-use in relation to energy infrastructure by identifying priority components for re-use in the oil and gas industry; addressing opportunities for reusing onshore wind turbines and bases; identifying re-use opportunities relating to Scotland's grid and transmission infrastructure (p. 18).'</li> <li>• 'Build on existing Skills Investment Plans to encourage schools to embed circular economy principles within their curriculum to identify and support a cohort of teaching 'champions' for the circular economy, which will provide working collaboratively to develop a range of learning resources for use in the classroom and online; an example of this is the Glasgow-based white goods re-use and repair social enterprise which by received funding, helped staff and volunteers develop their repair skills (p. 39).'</li> </ul>
32	United Kingdom (Northern Ireland)	<p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>• 'The need to support and encourage the establishment and continuation of re-use and repair networks throughout Northern Ireland and the potential for cooperation through these networks on an island of Ireland basis. The expansion of re-use and repair networks will promote the development of social enterprises at a community level and stimulate opportunities for green jobs. The waste prevention forum planned in 2014 will have a particular focus on establishing a repair and reuse network across Northern Ireland (p. 33).'</li> <li>• 'The Department of the Environment will work with partners across the UK and beyond to influence supply chains, and promote the extension of product lifetime for electronics and reduce wastage of electronic products that are still in working order. Locally the Department of the Environment will seek to work with and support stakeholders to increase the re-use of electronic and electrical equipment, and will assist the development of new business models with partners for re-use schemes and promote standards such as PAS141 (p. 35).'</li> </ul> <p><b>Qualitative prevention</b></p> <ul style="list-style-type: none"> <li>• Sustainable re-use of greenfield soil in construction and on the reuse of asphalt road planings helping to prevent these valuable materials from becoming waste in the first place</li> <li>• Reusing unwanted books 'Pass It On' project (p. 33)</li> </ul>

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## A1.6 (cont.) Reuse measures

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33 United Kingdom (Wales)	<p><b>Quantitative prevention</b></p> <ul style="list-style-type: none"> <li>• 'Supporting networking infrastructure to encourage the reuse of surplus materials (p. 52).'</li> </ul> <p><b>Directive 2008/98, Annex IV</b></p> <ul style="list-style-type: none"> <li>• '4. The Welsh Government will encourage designers/architects to design for the end of life of the building. This will ensure that the materials used in the construction of the building contain a high percentage of recycled content (helping to create a market for recycled materials and products) and that, throughout the life of the building, the materials can be either reused or recycled. The Welsh Government will work to raise awareness of the importance of designing for "end of life" (p. 52).'</li> <li>• '5. The Welsh Government will determine the feasibility of establishing a network of surplus centres for the redistribution of construction materials and products for community benefit (p. 52).'</li> <li>• '12. Consumer campaigns will focus on the following waste prevention work streams: food, clothing, shoes, electronic equipment, longer product life times, junk mail, home composting, real (i.e. reusable) nappies, reuse and repair, and hazardous household waste (pp. 16-17).'</li> <li>• '15. The Welsh Government has assessed options for increasing reuse by preparing for the reuse and repair of household, business, and construction and demolition products currently entering the waste system. Detailed options have been developed for electrical items, furniture and clothing (p. 55).'</li> </ul>
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